

Environmental Monitoring Report

Semi-Annual Environmental Monitoring Report
July – December 2015

VIE: Renewable Energy Development and
Network Expansion and Rehabilitation for
Remote Communes Sector Project
(DakPring Hydropower Project)

Prepared by Central Power Corporation for Vietnam Electricity and the Asian
Development Bank

CURRENCY EQUIVALENTS

(As of 31st December 2015)

Currency unit	-	Vietnamese Dong (VND)
VND1.00	-	\$0.0000442
\$1.00	-	VND22.605

ABBREVIATIONS

ADB	Asian Development Bank
CGC	Central Grid Company
Co., Ltd.	Company Limited
CPC	Central Power Corporation
CREB	Central Rural Electricity Project Management Board
DONRE	Department/Division of Natural Resources and Environment
DPC	District People's Committee
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMS	Environmental Management System
HPP	Hydropower Project
IEE	Initial Environmental Examination
JSC	Joint Stock Company

WEIGHTS AND MEASURES

MW	-	Megawatt
Km	-	Kilometer
Km ²	-	Square kilometers
l/s	-	Litres per second
M	-	Meter
m ³	-	Cubic metre
m ²	-	Square metre
mm	-	Milimeter
s	-	seconds
mg/l	-	Miligram/litre
dB(A)	-	Decibel (weighted average)

NOTE

- (i) In this report, "\$" refers to US dollars.

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I. INTRODUCTION

1.1. Project information

DakPring Hydropower Project is a sub-project of Loan 2517-VIE: belonging to component 1 of Renewable Energy Development and Network Expansion and Rehabilitation for Remote Communes Sector Project which is funded by the Asian Development Bank (ADB). The implementing agency of this sub-project is Central Power Corporation (CPC). Central Grid Company is assigned by CPC to implement and manage the Project.

Project location

DakPring Hydropower Project (DakPringHPP) is located in DakPring Stream in Cha Val Commune, Nam Giang District, Quang Nam Province, 40 km far from Thanh My Town to the West and 160km far from Tam Ky Town to the Northwest. The project area is located within buffer zone of Song Thanh Nature Reserve and about 2 km far from the edge of its core zone. National Highway 14D is 2km far from the dam site and 500m far from the powerhouse site. Location of DakPring Hydropower Plant is shown in Figure 1.

Main objective of Project

The main objective of DakPring Hydropower Project is power generation for the national grid and for the local with average annual energy of 30.45 million kWh in order to improve power quality and supply the households who have not yet been provided with electricity. Furthermore, the Project will contribute to promote socio-economic development in the project area, enhance living standards of ethnic minority households which forms a part of population of Quang Nam Province in the event of formation of reservoir, supplying water for irrigation and employment creation resulting from the Project.

Main work items

According to the technical design of DakPringHPP approved by Central Power Corporation under Decision No.1422/QD-EVNCPC dated April 4, 2013, DakPring Hydropower Plant has the following salient figures:

Basin

- *Area of basin Flv* *296 km²*
- *Mean annual flow Qo:* *18.1 m³/s*

Reservoir:

- *Fully supply level (FSL):* *287.0 m*
- *Minimum operating level:* *286.0 m*
- *Consolidated water level P=0.5%:* *295.98 m*
- *Reservoir area at FSL:* *0.36 km²*
- *Gross storage:* *3.22 x 10⁶ m³*
- *Active storage:* *0.36 x 10⁶ m³*

Capacity

- Installed capacity (N_{lm}): 7.5 MW
- Firm capacity (N_{đb}): 1.15 MW
- Number of generators: 02
- Mean annual energy: 30.44×10^6 kwh/year

Total project cost: 278,867,000,000 VND

Commencing time: December 2014

Intended completion time: March 2017

Project components

Key project components includes weir, spillway, diversion intake, intake gate, headrace tunnel, powerhouse and tailrace canal, 35 kV distribution station and transmission line, site office, access roads connecting the project site with National Highway 14D.

Apart from the key components, there are several auxiliary works established to serve the project construction.



Figure1: Location of DakPring Hydropower Project

1.2.Purpose of environmental monitoring

In the past, the Central Rural Electricity Project Management Board (CREB) of the Central Power Corporation (CPC) was been appointed as the department to undertake the management of the implementation of sub-projects of Loan 2517-VIE. But from May 1st 2015, CPC has changed the representative for managing hydropower projects of Section 1 of Loan 2517-VIE from CREB to the Central Grid Company (CGC) (Following the Decision no.2396/QD-EVNCPC signed by Mr. Tran Dinh Nhan on April 15th 2015).

The Hydropower Section, directly monitoring the implementation of DakPring Hydropower Project, has been moving from CREB to CGC to continue managing DakPring Hydropower Project. The CGC is also tasked to establish and assess the environmental performance of the sub-project and its contractors with a view of improving the environmental performance of the overall project.

This Environmental Monitoring Report presents the results of the monitoring of the construction of DakPring Hydropower Project. The report documents the status of project implementation, compliance with the Environmental Management Plan (EMP), and also compliance with the environmental regulatory requirements of the Government of Vietnam. The report also aims to present corrective or remedial measures for environmental impacts observed during the monitoring period.

The CREB reviewed and monitored the implementation of the EMP based on the Initial Environmental Examination (IEE) report which was submitted to ADB. The Environmental Compliance and Monitoring Form and Environmental Monitoring Checklist provided by ADB were used to assess the compliance of the contractors with the EMP and with ADB's Environment Safeguards. Site visits were carried out to validate implementation of the mitigation measures.

The objectives of the monitoring are

The periodic environment monitoring aims to:

- Monitor the project's compliance with Vietnam Technical Regulations and Law on Environment;
- Monitor the project's compliance with ADB's Environment Safeguards requirements;
- Monitor the contractors' compliance with mitigation measures to address construction impacts on the environment as per Contract Conditions and the EMP;
- Determine corrective actions to minimize negative impacts on the environment during the construction phase;

This report presents the results of the 2nd environmental monitoring.

II. STATUS OF LEGAL AND POLICY COMPLIANCE

The Environmental Impact Assessment (EIA) report of DakPring Hydropower Project was approved by Quang Nam Province People's Committee in Decision No.4000/QD-UBND on 19 December 2013. The IEE was also endorsed by ADB. The EMP in the approved IEE was included in the bid document with the contractors. The responsibility of EMP implementation during the construction phase of the project was entrusted to the contractors of the project. The implementation of the EMP by the contractors is being monitored by the field officers of the Hydropower Section of CGC and Environment monitoring consultant.

The DakPring Hydropower Project has secured the following licenses and clearances for its implementation:

Table 1: Environmental Licenses and Clearances Secured

<i>License/Clearance</i>	<i>License/Clearance No.</i>	<i>Issued by</i>	<i>Date Issued</i>
EIA Approval	4000/QD-UBND	Quang Nam Province People's Committee	19/12/2013
Confirmation on completion of site clearance and compensation	23/XNHTGPMB	Nam Giang DPC	31/12/2014
Notice of safety for the site to which detection and disposal of bomb, mine and explosive ordnance was conducted	1075/TB-CT	Military Region 5 High Command	29/9/2014

III. ENVIRONMENTAL MANAGEMENT SYSTEM

The Environment and Social Development Cell has not been created by CPC. Instead, a focal person on environmental matters has been appointed within CREB to audit the implementation of the EMP by the contractor and to coordinate activities related to the EMP implementation and monitoring. A monitoring system will be developed and implemented on a regular basis. Documentation of monitoring activities will be retained at the project site by the CREB.

Parties in the EMS and respective responsibilities during construction & operation phases are presented in the table below:

Table 2: Parties and respective responsibilities in the EMS

<i>Parties</i>	<i>Responsibilities</i>
CGC	Management and monitoring to ensure contractors to perform compliance in EMP implementation; Prepare semi-annual environmental monitoring report to submit to ADB and Quang Nam Department of Natural Resources and Environment (Quang Nam DONRE);
Construction Contractor	Implement contents of EMP following the signed contract;
Environmental monitoring consultant	Examine and monitor the implementation of mitigation measures for environmental impacts on natural and social environment in the project area; Provide recommendations on EMP implementation for contractors;
Quang Nam Department of Natural Resources and Environment (Quang Nam DONRE)	Supervise and examine the implementation of mitigation measures for project environmental impacts according to the EIA report (Vietnamese DTM) approved by Quang Nam Provincial People's Committee;
Nam Giang District People's Committee	General management of natural resources and environment in the district area;
Nam Giang Division of Natural Resources and Environment (Nam Giang DONRE)	Management of natural resources and environment in the district area;
Chaval Commune People's Committee	General management of natural resources and environment in the commune area;

The following are the personnel assigned by CGC and the contractor to monitor compliance with environmental mitigation measures:

Table3: List of contacts/members in EMS

<i>Name of Personnel</i>	<i>Organization</i>	<i>Responsibilities</i>
Tran Ngoc Quyen	CGC	Supervision team leader – Supervising package No. 04-DPr
Nguyen Hien	CGC	Supervisor of packages No. 03-DPr, No.05-DPr and No. 09-DPr
Ngo Tan Cung	CGC	Supervisor of package No. 06-DPr
Luu Van Hung	CGC	Supervisor of package No. 10-DPr
Nguyen Hai Thinh	Construction No.564 Co., Ltd	Deputy director – Contractor of access roads/operation route construction, Package No. 03-DPr
Pham Ngoc Lien	Construction No.47 JSC	Engineer – Contractor of headrace tunnel and intake gate construction, Package No. 05-DPr
Nguyen Tuan Phi	Consulting Construction & Electric power development JSC	Engineer – Contractor of powerhouse and suspended substation construction, Package No. 06-DPr
Nguyen Xuan Tin	Hoang Duoc Phat Co., Ltd	Superintendent– Contractor of construction and supply material and equipment for 35kV electric line, Package No. 10-DPr

IV. WORK PROGRESS

Packages and construction contractors are listed in the table below:

Table4: Information on packages and construction contractors

<i>Construction package</i>	<i>Description of work item in the package</i>	<i>Name of construction contractors</i>	<i>Contact information</i>
No. 03-DPR	Construction of access roads/operation route	Construction No.564 Co., Ltd	Nguyen HaiThinh
No. 04-DPR	Construction of headworks	Joint venture between NgheAn Hydraulic Construction No.1 JSC and Construction No.564 Co., Ltd	Nguyen HaiThinh
No. 05-DPR	Construction of headrace tunnel and intake gate	Construction No.47 JSC	Pham Ngoc Lien
No. 06-DPR	Construction of powerhouse and suspended substation	Consulting Construction & Electric power development JSC	Nguyen Tuan Phi
No. 09-DPR	Construction of house for administration	Ha GiangPhuocTuong Mechanical JSC	Completed
No. 10-DPR	Construction and supply material and equipment for 35kV electric line	Hoang DuocPhat Co., Ltd.	Nguyen Xuan Tin

According to the report of the DakPringHPP supervision team of CGC dated December 30th, 2015, the project implementation progress is shown as follows:

Table5: Work progress until 30th December, 2015

<i>Project component</i>	<i>Time started</i>	<i>Completion</i>	<i>Remarks</i>
Detection and disposal of bomb and mine	2014	100%	
Construction of access roads/operation route	11/2014	60%	
Construction of head works	11/2014	21%	
Construction of headrace tunnel and intake gate	9/2015	20%	



<i>Project component</i>	<i>Time started</i>	<i>Completion</i>	<i>Remarks</i>
Construction of powerhouse and suspended substation	12/2014	16%	
Construction of site office		100%	
Construction and supply material and equipment for 35kV electric line	01/2015	100%	

V. ENVIRONMENTAL COMPLIANCE MONITORING

Environmental compliance monitoring is implemented by CGC to check compliance with EMP in the implementation of the construction activities by the contractors and environmental impacts to local areas/local residents during construction.

Table below describes implemented mitigation measures for anticipated impacts from IEE as well as current environmental impacts. Compliance level and Effectiveness of the implemented mitigation measures from Construction Contractors are also assessed.

Notes:

- *Compliance level and effectiveness level could be ranged from 1 to 5 (1: very good; 2: Good; 3: Fair; 4: Poor; 5: Very poor).*
- *“Compliance level” refers the actions which had been implemented to see if the actions follow proposed IEE or not. In “Compliance level” column, the consultant should decide marks ranged from 1-5; other than that, short passage is necessary to explain why ranking that mark.*
- *Could the impacts be reduced by mitigation measures which had been implemented? How is the impact reduced by that actions/mitigation measures? “Effectiveness level” reflects these two question. Short passage is also necessary for explanation in this column.*

Summarization of compliance monitoring

There are total 4 Compliance monitoring sheets for 4 contractors of construction packages. The table below shows average value of compliance level from 4 contractors to represent the project compliance level.

In general, compliance level and effectiveness of implemented mitigation measures were assessed from 1-3. Contractors have performed mitigation measures pretty well during construction. No accidents or incidents have occurred up to the monitoring time.

Main activities that have been performed on site at the 2nd monitoring time include: (i) construction of weir; (ii) construction of diversion intake; (iii) construction of headrace tunnel; (iv) construction of foundation pit of powerhouse (v) reinforcement of talus slope in the powerhouse area; (vi) operation of crushing & concrete batching plants; (vii) transportation of spoils. Compliance with mitigation measures for environmental impacts is assessed in the following table.

Table 6: Assessment of environmental compliance

Impacts	Mitigation measures from IEE	Mitigation measures implemented	Compliance level	Effectiveness	Impact observed/location	More action required & responsibilities	Contractor response
Earth works for new access roads and construction of penstock on steep slopes leading to erosion & encroachment.	<p>Slopes along access roads & penstock will be provided with:</p> <ul style="list-style-type: none"> + Catchments/ cut-off drains & chutes to minimize soil erosion. + Masonry retaining structures to control landslides and runoff. + Formation of sediment basins & slope drains to collect runoff water 	Excavation and reinforcement of drainage along the positive talus bottom was being completed. Slopes have been reinforced in the areas at high risk of landslides and erosion.	3	3	<p>Negative talus slope on access/operation management road was not reinforced and landslide happened in front of the site office.</p> <p>Landslide was still recored along negative talus slope on access road to the dam site.</p>	<p>Contractor – Construction No.564 Co., Ltd to complete reinforcement of slope of negative talus, especially in areas at risk of landslides.</p> <p>Besides, contractor is required to commit to regularly monitoring of areas at risks to address/overcome incidents timely (if any).</p>	Agree to monitor areas at high risk of landslides to inform relevant stakeholders and address timely.
	Maximum usage of material in fill areas	Maximum usage of material in fill areas: Excavated rocks from road construction and	1	1		Should be maintained	Agree



<i>Impacts</i>	<i>Mitigation measures from IEE</i>	<i>Mitigation measures implemented</i>	<i>Compliance level</i>	<i>Effectiveness</i>	<i>Impact observed/location</i>	<i>More action required & responsibilities</i>	<i>Contractor response</i>
		blasting for construction of the tunnel are crushed for reinforcement of tunnel roof, concreting in the dam and powerhouse, etc.					
	Spoils planning particularly on steep slopes with bench terracing for high cut areas & avoidance of any runoff of material on down slopes	Bench terracing, catchments, masonry are being implemented.	3	3	Talus slope at the waste disposal site near the powerhouse was not qualified; therefore, landslide could happen.	Consulting Construction & Electric power development JSC should conduct leveling after disposing of wastes, planting trees or grass on talus slope to prevent landslide at waste disposal sites.	Agree to consider and apply mitigation measures
	Tree planting programme on penstock areas,	Tree planting is planned to be carried out after	1	1		Areas above the penstock, access roads, surrounding	Agree



<i>Impacts</i>	<i>Mitigation measures from IEE</i>	<i>Mitigation measures implemented</i>	<i>Compliance level</i>	<i>Effectiveness</i>	<i>Impact observed/location</i>	<i>More action required & responsibilities</i>	<i>Contractor response</i>
	roads and surrounding areas to rehabilitate the temporary construction areas at dam site and powerhouse site.	completion of construction				areas, temporary construction areas should be returned to their original state or planted with trees.	
Taking of borrow materials with potential for loss and degradation of land	No earth will be borrowed from cultivable lands	Contractors have taken advantage of waste soil and rock for backfilling during construction. If there is not sufficient backfill materials, contractors will buy this type of material in the locality. To date, there is no need to buy more soils or exploit new borrow pits.	1	1		Should be maintained	Agree
	Borrowing to take place from barren, wastelands, & riverbeds.						
	For new borrow areas, all measures will be taken to avoid loss of any productive soil						
	Any borrow areas will be refilled, re-vegetated & landscaped with tree						



<i>Impacts</i>	<i>Mitigation measures from IEE</i>	<i>Mitigation measures implemented</i>	<i>Compliance level</i>	<i>Effectiveness</i>	<i>Impact observed/location</i>	<i>More action required & responsibilities</i>	<i>Contractor response</i>
	planting						
Taking of quarry materials with loss and degradation of land	Quarry materials will be obtained from existing operating sites with proper licenses & environmental clearances	Contractors have taken advantage of rocks from excavation of roads and blasting for tunnel excavation for works such as crushing and concreting.	1	1		Should be maintained	Agree
	New quarries to be opened only with permission of respective authorities	In case, more rocks are required, contractors will buy rocks instead of exploiting new quarries. Up date, there is no need to buy more quarry materials.					
Operation of construction equipment and construction	Fuel storage & refueling will have adequate containment and away from water	Fueling areas were located in a high location and away from water	3	3	Fueling areas of contractors (Construction No.564 Co., Ltd, Construction	Fuel must be stored in tanks and situated in hazardous waste storage area with	Agree to consider mitigation measures



<i>Impacts</i>	<i>Mitigation measures from IEE</i>	<i>Mitigation measures implemented</i>	<i>Compliance level</i>	<i>Effectiveness</i>	<i>Impact observed/location</i>	<i>More action required & responsibilities</i>	<i>Contractor response</i>
activities and contamination of soils and water pollution	bodies/channel.	bodies/channel			No.47 JSC, Consulting Construction & Electric power development JSC) were located outdoors with temporary roof or no roof and without oil resistant lining material. Consulting Construction & Electric power development JSC covered oil drums with tarpaulin.	high ground and roof and trench to collect leaked oil	
	Construction/equipment will be properly maintained	Equipment will be properly maintained on site if necessary. Machines/equipment that has not yet	3	3	Specialized area for maintaining machines/equipment has not yet been established. Excavators have	Joint venture between Nghe An Hydraulic Construction No.1 JSC and Construction	Agree to consider mitigation measures



<i>Impacts</i>	<i>Mitigation measures from IEE</i>	<i>Mitigation measures implemented</i>	<i>Compliance level</i>	<i>Effectiveness</i>	<i>Impact observed/location</i>	<i>More action required & responsibilities</i>	<i>Contractor response</i>
		been used are gathered at vehicle gathering area.			been gathered and repaired in an area with no roof and oil resistant flooring, as a result, oil leaked into the ground.	No.564 Co., Ltd should establish specialized area for gathering and repairing machines/equipment with oil resistant flooring, trenches to prevent oil from infiltrating into the soil.	
	Precautions to be taken to prevent water pollution due to increased siltation & turbidity at weir site & road construction.	<p>Washing vehicles in Dak Pring Stream (that was required to stop in the 1st monitoring) ended.</p> <p>In addition, wastewater generated from concreting has been collected and treated by preliminary</p>	2	2	Opening access road along stream banks to transport construction materials to the dam site (Construction No.564 Co., Ltd and Nghe An Hydraulic Construction No.1 JSC) has increased the turbidity level of	Contractors including Construction No.564 Co., Ltd and Nghe An Hydraulic Construction No.1 JSC should minimize dropping and landslides when constructing access roads nearby the stream as well as promote	Agree



<i>Impacts</i>	<i>Mitigation measures from IEE</i>	<i>Mitigation measures implemented</i>	<i>Compliance level</i>	<i>Effectiveness</i>	<i>Impact observed/location</i>	<i>More action required & responsibilities</i>	<i>Contractor response</i>
		sedimentation tank before discharging into Dak Pring Stream (Construction No.564 Co., Ltd and Nghe An Hydraulic Construction No.1); however, the volume of wastewater was insignificant.			surface water, especially in the location from the dam to the temporary bridge crossing the stream (300m far from the dam toward upstream area)	construction progress in order to complete the access roads as soon as possible.	
	Waste materials must be stored and treated at regulated places.	Waste materials must be collected at designed disposal site.	2	2	Large rocks gathered on access road along the stream near the powerhouse (construction area of Consulting Construction & Electric power development JSC) may fall into the stream. Warning	Consulting Construction & Electric power development JSC should collect large stones near road and transport to disposal site or crushing plant for using. Warning signs should be	Agree



<i>Impacts</i>	<i>Mitigation measures from IEE</i>	<i>Mitigation measures implemented</i>	<i>Compliance level</i>	<i>Effectiveness</i>	<i>Impact observed/location</i>	<i>More action required & responsibilities</i>	<i>Contractor response</i>
					signs have not been provided. Still, littering has happened along the construction sites.	provided and rocks shouldn't be gathered in this area. Contractors should collect redundant materials for selling. Littering is not allowed in the construction site.	
	Refuse oil must be collected, stored and treated at regulated places.	Refuse oil has been collected in drums and plastic containers which are located outdoors separately.	3	3	Refuse oil was contained in drums carelessly covered or without cover and no oil resistant flooring (Consulting Construction & Electric power development JSC). Oil leakage was recorded at the excavator placing location of	Contractors (NgheAn Hydraulic Construction No.1 JSC and Construction No.564 Co., Ltd) should collect, store and treat refuse oil in regulated areas which are provided with roof, oil resistant flooring, drainage, oil	Agree to minimize oil leakage and consider mitigation measures.



<i>Impacts</i>	<i>Mitigation measures from IEE</i>	<i>Mitigation measures implemented</i>	<i>Compliance level</i>	<i>Effectiveness</i>	<i>Impact observed/location</i>	<i>More action required & responsibilities</i>	<i>Contractor response</i>
					Nghe An Hydraulic Construction No.1 JSC and Construction No.564 Co., Ltd	collection holes. Consulting Construction & Electric power development JSC should improve materials which are used to cover oil drums and provide oil resistant flooring.	
Social impacts & pollution from wastewater & solid waste	Construction camps will be located adjoining the dam and powerhouse sites & away from any settlement.	Worker camps were located near construction sites and away from any settlement	1	1		Should be maintained	Agree
	Manual labor will be employed locally.	Contractors hired many local workers to perform unskilled works such as excavation of drains, vegetation clearing,	1	1	Works were performed mainly in the powerhouse site under the supervision and guiding of technical staffs.	Should be maintained	Agree



<i>Impacts</i>	<i>Mitigation measures from IEE</i>	<i>Mitigation measures implemented</i>	<i>Compliance level</i>	<i>Effectiveness</i>	<i>Impact observed/location</i>	<i>More action required & responsibilities</i>	<i>Contractor response</i>
		mortar, transportation, etc.					
	Camps & residential colony will have properly designed sewage treatment system for wastewater effluent and a solid waste collection system.	Septic tanks have been provided in the camps. Domestic solid waste has been collected and burned (NgheAn Hydraulic Construction No.1 JSC) or buried (the remaining contractors) every 2-3 days.	3	3	Littering still continued at the camp of Construction No.564 Co., Ltd. Waste pits of contractors were shallow and not covered; moreover, their bottoms were not lined with layer. Plastic materials/nylon were found in waste pits of NgheAn Hydraulic Construction No.1 JSC. In case of burning, it will release toxic pollutants.	Littering must be ended, especially in the camp area of Construction No.564 Co., Ltd. Waste pits should be located at high locations with proper size and cover. In case of burning, wastes must be classified to separate plastic materials/nylon from other waste materials. These materials should be buried hygienically.	Agree



<i>Impacts</i>	<i>Mitigation measures from IEE</i>	<i>Mitigation measures implemented</i>	<i>Compliance level</i>	<i>Effectiveness</i>	<i>Impact observed/location</i>	<i>More action required & responsibilities</i>	<i>Contractor response</i>
Damage to existing roads	Require contractors to rehabilitate areas or road sections damaged during hauling of materials	Contractors commit to rehabilitate local road sections damaged during transportation of materials. (if any)	1	1	According to the monitoring results, materials transporting has not caused any impact on or damage to existing roads since the construction sites are located far from residential colony and contractors mainly construct new access roads serving construction.	Should be maintained	Agree
Emission from construction vehicles & equipment causing air	Emission levels of all construction vehicles & equipment will conform to Vietnamese emission standards.	Emission levels of all construction vehicles & equipment conform to Vietnamese emission	1	1		Should be maintained	Agree



<i>Impacts</i>	<i>Mitigation measures from IEE</i>	<i>Mitigation measures implemented</i>	<i>Compliance level</i>	<i>Effectiveness</i>	<i>Impact observed/location</i>	<i>More action required & responsibilities</i>	<i>Contractor response</i>
pollution		standards.					
	Pollutant parameters will be monitored during construction	Monitoring of air quality with parameters such as dust, TPS and noise was carried out.	1	1		Should be maintained	Agree
	Crushing& concrete batching plants will be away from population centers and located near the dam and powerhouse sites.	Crushing& concrete batching plants/ petrol filling station are away from surface water sources and populated areas.	1	1		Should be maintained	Agree
	Require drivers to slow down vehicle speed when passing through populated areas	All drivers drive at a lower speed when passing through populated areas.	1	1	Transportation was mainly conducted within the construction site and far away from populated areas	Should be maintained	Agree
Dust particulate	All precautions to be taken to reduce dust	Portable crushers& concrete batching	3	3	Frequency of water spraying at	Contractors including NgheAn	Agree



<i>Impacts</i>	<i>Mitigation measures from IEE</i>	<i>Mitigation measures implemented</i>	<i>Compliance level</i>	<i>Effectiveness</i>	<i>Impact observed/location</i>	<i>More action required & responsibilities</i>	<i>Contractor response</i>
causing health impacts for workers and villagers	level emissions from crushing & concrete batching plants at dam and powerhouse sites.	plant are located far from populated areas and construction camps. Batching concrete plant is designed as closed plant to minimize dust emission. Crushing plant was watered when necessary.			the crushing plant did not meet the requirement; as a result, there was significant amount of dust generated.	Hydraulic Construction No.1 JSC and Construction No.564 Co., Ltd should maintain the regular water spraying on materials before crushing and conduct water spraying on dust prone areas when necessary.	
	Regular water spraying at all mixing sites & temporary service roads will be undertaken.	Regular water spraying has been conducted at crushing plant area only.	3	3	Frequency of water spraying at the crushing plant did not meet the requirement; as a result, there was significant amount of dust generated. Contractors did not conduct water	Contractor (Consulting Construction & Electric power development JSC) should conduct water spraying on the transporting routes and ensure frequency of water spraying in the	Agree



<i>Impacts</i>	<i>Mitigation measures from IEE</i>	<i>Mitigation measures implemented</i>	<i>Compliance level</i>	<i>Effectiveness</i>	<i>Impact observed/location</i>	<i>More action required & responsibilities</i>	<i>Contractor response</i>
					spraying on temporary service roads.	crushing plant area (watering before and after crushing).	
	All delivery vehicles will be covered with tarpaulin	A number of delivery vehicles have been covered with tarpaulin if required.	3	3	Delivery vehicles were not covered with tarpaulin so loose materials dropped on roads generating dust.	Consulting Construction & Electric power development JSC should cover spoil when delivering to the waste disposal site.	Agree
	Require drivers to slow down when passing through populated areas	Drivers reduced speed when driving through residential area.	1	1		Should be maintained	Agree
Construction activities, vehicles, plant & equipment causing	All construction equipment & plants will conform to Vietnamese noise standards	All construction machines/equipment are within validity period and conform to Vietnamese noise standards.	1	1		Should be maintained	Agree



<i>Impacts</i>	<i>Mitigation measures from IEE</i>	<i>Mitigation measures implemented</i>	<i>Compliance level</i>	<i>Effectiveness</i>	<i>Impact observed/location</i>	<i>More action required & responsibilities</i>	<i>Contractor response</i>
noise pollution.	All vehicles & equipment to be fitted with noise abatement devices	When noise issues arise, vehicles /machines/equipment will be maintained and repaired timely.	1	1	All construction machines/equipment are within valid period and operated far away from populated areas; therefore, noise abatement devices are not required.	Contractors should arrange suitable operating time period of machines and avoid using machines with big noise at construction sites near populated areas.	Agree
	Construction workers will be provided with personal protection.	Construction workers have been provided with hearing protection devices when working at special areas	1	1	Workers must use earplugs only when working in a number of special construction areas such as rock blasting area.	Contractors should monitor the use of hearing protection devices by construction workers.	Agree
Noise pollution from any blasting activities at dam and power tunnel	Any blasting works will be in accordance with Vietnamese Explosives Act	Contractor contracted with a specialized services provider to implement the rock blasting. According	1	1		Should be maintained	Agree



<i>Impacts</i>	<i>Mitigation measures from IEE</i>	<i>Mitigation measures implemented</i>	<i>Compliance level</i>	<i>Effectiveness</i>	<i>Impact observed/location</i>	<i>More action required & responsibilities</i>	<i>Contractor response</i>
and penstock.		to the agreement between these two parties, the specialized services provider has to implement the rock blasting in compliance with QCVN 02:2008/BCT– National technical regulation on safety in the storage, transportation, use and disposal of industrial explosive materials and ensure absolute safety when the rock blasting is performed in the project area.					
	Blasting in the daytime only.	Rock blasting has been carried out in the daytime and	1	1		Should be maintained	Agree



<i>Impacts</i>	<i>Mitigation measures from IEE</i>	<i>Mitigation measures implemented</i>	<i>Compliance level</i>	<i>Effectiveness</i>	<i>Impact observed/location</i>	<i>More action required & responsibilities</i>	<i>Contractor response</i>
		not in rest time of workers					
	Residents close by will be informed well in advance of blasting schedules	Residents close by were informed of blasting schedules (attached in Appendix 2). Specialized services provider encouraged households who carried out farming nearby moved to safe areas before conducting rock blasting.	1	1		Should be maintained	Agree
	Workers associated with blasting sites will be provided with earplugs, helmets & other personal safety devices	Workers associated with blasting sites have been provided with earplugs, helmets, boots& other personal safety devices	1	1		Should be maintained	Agree



<i>Impacts</i>	<i>Mitigation measures from IEE</i>	<i>Mitigation measures implemented</i>	<i>Compliance level</i>	<i>Effectiveness</i>	<i>Impact observed/location</i>	<i>More action required & responsibilities</i>	<i>Contractor response</i>
Construction of dam, reservoir, tunnel, penstock with loss of vegetation & tree cover	No trees to be removed without prior approval	Site clearance was conducted only within the site clearance boundary	1	1		Should be maintained	Agree
	Compensation for lost trees on private land	Nam GiangDPC confirmed completion of site clearance and compensation for the project in writing.	1	2	Two households required compensation for affected hill land and plants located outside site clearance boundary as a result of construction of the powerhouse (Consulting Construction & Electric power development JSC)	Consulting Construction & Electric power development JSC should coordinate with the project owner and other relevant stakeholders to verify and compensate these two households if they are affected by the project.	Agree
	Tree planting programmer implemented at dam area, tunnel,	Tree planting is expected to be performed after all construction	1	1		Tree planting should be carried out in the areas on which all	



<i>Impacts</i>	<i>Mitigation measures from IEE</i>	<i>Mitigation measures implemented</i>	<i>Compliance level</i>	<i>Effectiveness</i>	<i>Impact observed/location</i>	<i>More action required & responsibilities</i>	<i>Contractor response</i>
	penstock, temporary construction areas, roads and other elements of the project. Indigenous tree species being accorded priority over exotic species	activities are completed.				construction activities have been completed. Native plant species are prioritized.	
Work force during construction causing impacts on wildlife	Construction workers to be educated on wildlife conservation with no hunting & poaching to be allowed for workers.	Construction workers to be educated on wildlife conservation with no hunting & poaching to be allowed for workers.	1	1	No hunting or poaching by workers was found.	Should be maintained	Agree
Construction activities causing accident and safety risks	Warning signs should be provided in blasting areas and other areas in which occupation risks and safe loss are likely to occur.	Warning signs have been provided in blasting areas; Regulated safety radius is about 500m far from the blasting	2	2	Warning signs/safety signs have not been provided at the construction sites.	Installation of additional warning signs and work safety signs at construction areas.	Agree



<i>Impacts</i>	<i>Mitigation measures from IEE</i>	<i>Mitigation measures implemented</i>	<i>Compliance level</i>	<i>Effectiveness</i>	<i>Impact observed/location</i>	<i>More action required & responsibilities</i>	<i>Contractor response</i>
		heart.					
	Workers will be provided with helmets, gauze masks & safety goggles, etc.	Workers have been provided with helmets, gauze masks & safety goggles, etc.	2	2	A number of workers did not use personal protective equipment. There was no case of occupational safety loss recorded; however, not using personal protective equipment is a potential occupational risk during construction.	Contractor supervisors should monitor and remind workers to use personal protective equipment.	Agree
	A readily available first aid unit will be available with medicines and dressing materials.	Medicines and dressing materials have been provided in the camps.	3	3	At the camps, medicine cabinets have been arranged or medicines have been distributed to	If there is no doctor available on site, contractors must contact nearest clinic for first aid in case of	Agree



<i>Impacts</i>	<i>Mitigation measures from IEE</i>	<i>Mitigation measures implemented</i>	<i>Compliance level</i>	<i>Effectiveness</i>	<i>Impact observed/location</i>	<i>More action required & responsibilities</i>	<i>Contractor response</i>
					workers for storage and use. However, there were still very few types of medicines in the cabinets. No readily available first aid unit available on site, contractors will contact the nearest health clinic in the locality for first aid in case of incident.	incidents. In addition, workers should be trained on first aid measures and provided with more types of medicines.	
	Road safety education will be given to construction vehicle drivers;	Road safety education has been given to construction vehicle drivers;	1	1		Should be maintained	Agree
	Traffic management will be ensured during road	Ensuring traffic safety during construction of	1	1		Should be maintained	Agree



<i>Impacts</i>	<i>Mitigation measures from IEE</i>	<i>Mitigation measures implemented</i>	<i>Compliance level</i>	<i>Effectiveness</i>	<i>Impact observed/location</i>	<i>More action required & responsibilities</i>	<i>Contractor response</i>
	construction periods	roads by measures such as slowing down when passing populated areas and not transporting at night.					
	Information dissemination will take place through the Commune's People's Committee regarding activities causing disruption	Specialized services provider for construction of the powerhouse coordinated with CPC to inform and seal off road in blasting time.	1	1		Should be maintained	Agree
Construction activities causing disruption to Public Utilities	Any public utilities likely to be impacted, such as water supply pipe system, power/phone lines, etc. must be relocated to suitable places, in consultation with	The project implementation has not affected public water supply, electric power line and communication line.	1	1		Should be maintained	Agree



<i>Impacts</i>	<i>Mitigation measures from IEE</i>	<i>Mitigation measures implemented</i>	<i>Compliance level</i>	<i>Effectiveness</i>	<i>Impact observed/location</i>	<i>More action required & responsibilities</i>	<i>Contractor response</i>
	local beneficiaries						
Any discovery of artifacts or articles of historic interest and importance	For all finds of an historic or cultural value, work will be stopped and the find reported to the nearest office of the Department Culture, Sport and Tourism or the Department of Culture and Information.	For all finds of an historic or cultural value, work will be stopped and the find reported to the nearest office of the Department Culture, Sport and Tourism or the Department of Culture and Information.	1	1	There were no artifacts or articles of historic interest and importance detected in the project area.	Project Management Board is responsible for implementing this regulation in case artifacts or articles of historic interest and importance are discovered.	

VI. PHYSICAL ENVIRONMENT MONITORING

6.1. Air and noise

Objective: Air and noise monitoring was conducted to assess impacts by construction on the air in residential areas as well as on project workers.

Frequency: According to TOR, air and noise monitoring will be carried out every three months.

Parameters: TSP, PM10, noise

Time and location: Air and noise sampling was conducted 2 times: (i) the sampling in the 3rd quarter on September 4th 2015 and (ii) the sampling in the 4th quarter on December 28th 2015. Air and noise samples were taken at dam site (KK1), powerhouse site (KK2) and Dak Ring Bridge (KK3) to assess air and noise impacts by construction on adjacent residential areas and workers.

Table 7: Sampling locations, parameters and analysis standards for air quality monitoring

Code	KK1	KK2	KK3
Locations	Dam site	Powerhouse site	Dac Ring Bridge – National road 14D
Descriptions	Sample taken at a mountainous area where construction was being conducted.	Sample taken at a mountainous area where construction was being conducted.	Sample taken at a sparsely populated mountainous area
Coordinates	107°33'16.450"N, 15°37'45.620"E	107°33'21.250"N, 15°38'13.454"E	107°33'15.356"N, 15°38'19.950"E
Time:			
1. The 3 rd quarter sampling	10:30am 04/09/2015	13:55pm 04/09/2015	15:15pm 04/09/2015
2. The 4 th quarter sampling	14:00pm 28/12/2015	15:05pm 28/12/2015	16:10pm 28/12/2015
Parameters	Noise, Total suspended particles (TSP) Particulate matter PM10	Noise, Total suspended particles (TSP) Particulate matter PM10	Noise, Total suspended particles (TSP) Particulate matter PM10

Code	KK1	KK2	KK3
Methodology and analysis standard	Dedicated equipment was used to measure the quality of air in the area. Analysis methodology follows the Vietnam Standards: <ol style="list-style-type: none"> 1. TSP, PM10: TCVN 5067- 1995 2. Noise level: TCVN 7878 -2: 2010 		

The following figure presents locations of air sampling.

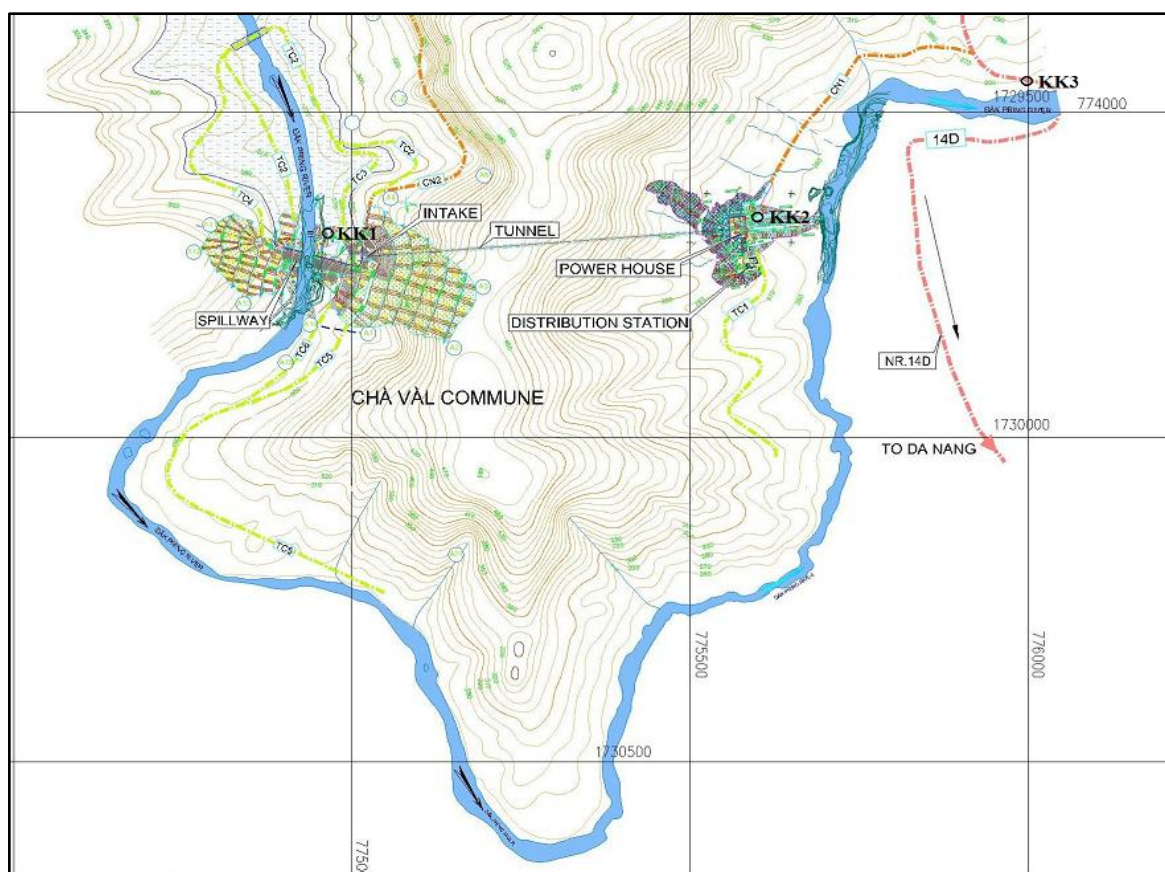


Figure2: Air sampling location map

Analysis results were compared with National technical regulation on ambient air quality QCVN 05:2013/BTNMT and National technical regulation on noise QCVN 26:2010/BTNMT and given in the following table.

Table8: Results of ambient air quality analysis

Parameters	Results		QCVN 05:2013/ BTNMT	Remarks	
	3 rd quarter sampling	4 th quarter sampling		3 rd quarter sampling	4 th quarter sampling
TSP					
KK1	0.06 mg/m ³	0.04 mg/m ³	≤0.3 mg/m ³	Pass	
KK2	0.02 mg/m ³	< 0.07 mg/m ³		Pass	
KK3	0.04 mg/m ³	< 0.01 mg/m ³		Pass	
PM10					
KK1	< 0.01 mg/m ³	0.04 mg/m ³	≤ 0.3 mg/m ³	Pass	
KK2	< 0.01 mg/m ³	< 0.07 mg/m ³		Pass	
KK3	< 0.01 mg/m ³	< 0.01 mg/m ³		Pass	

Table 9: Results of noise level analysis

Parameters	Results		QCVN 26:2010/ BTNMT	Remarks	
	3 ^d quarter sampling	4 th quarter sampling		3 ^d quarter sampling	4 th quarter sampling
Noise					
KK1	69.4dBA	76 dBA	≤70 dBA	Pass	Not pass
KK2	66.7dBA	60 dBA		Pass	Pass
KK3	58.8dBA	54.5 dBA		Pass	Pass

Content of TSP and PM10 measured at all sampling locations in two samplings (3rd quarter sampling and 4th quarter sampling) is within the allowable limit of the QCVN 05:2013/BTNMT. In the 3rd quarter sampling, noise level measured at the dam site is within the allowable limit. In the 4th quarter sampling, due to increase in construction intensity, noise level measured is higher than that of the allowable limit of the QCVN 26:2010/BTNMT. However, the noise level is a little higher (1.08 times) and this site is not located nearby residential areas so the scope of impact by such noise is not significant.

Noise levels measured at the powerhouse site and Dac Ring Bridge – National highway 14D in both two samplings are within the allowable limit of the QCVN 26:2010/BTNMT. In general, construction activities implemented at the sampling time did not result in significant impact on ambient air quality as well as noise impacts.

6.2. Surface water quality

Objective: Surface water sampling was conducted to monitor impacts by construction activities on adjacent surface water sources.

Frequency: According to TOR, surface water monitoring will be implemented every three months.

Parameters: pH, turbidity, DO, BOD₅, total lubricant and Coliforms.

Time and location: Surface water sampling was carried out 2 times: (i) the sampling in the 3rd quarter on September 3rd 2015 and (ii) the sampling in the 4th quarter on December 28th 2015. Surface water samples were taken in DakPringStream to monitor impacts by construction activities on adjacent surface water sources.

Table 10: Sampling locations, parameters and analysis standards for surface water quality monitoring

Code	NM1	NM2	NM3
Locations	Sample taken in DakPringStream, 300m far from the dam toward the upstream	Sample taken in the stream section between the dam and the powerhouse	Sample taken in DakPringStream - Dac Ring Bridge - 300m far from the powerhouse toward the downstream
Descriptions	Low water level, slow flow, construction was happening	Low water level, slow flow, construction was happening	Low water level, slow flow
Coordinates	107°33'16.125"N, 15°37'51.023"E	107°33'22.540"N, 15°38'10.742"E	107°33'15.423"N, 15°38'20.295"E
Time			
1. The 3 rd quarter sampling	11:15am 03/09/2015	14:30pm 03/09/2015	15:55pm 03/09/2015
2. The 4 th quarter sampling	14:15pm 28/12/2015	15:10pm 28/12/2015	16:00pm 28/12/2015
Parameters	pH, Turbidity, DO, BOD ₅ , Total lubricant, Coliforms		
Analysis methods and standards	TCVN 6663 -1:2011 TCVN 6663-1:2008		

Code	NM1	NM2	NM3
	TCVN 5994: 1995		
	TCVN 6663-6: 2008		

Locations of surface water sampling are given in the following figure.

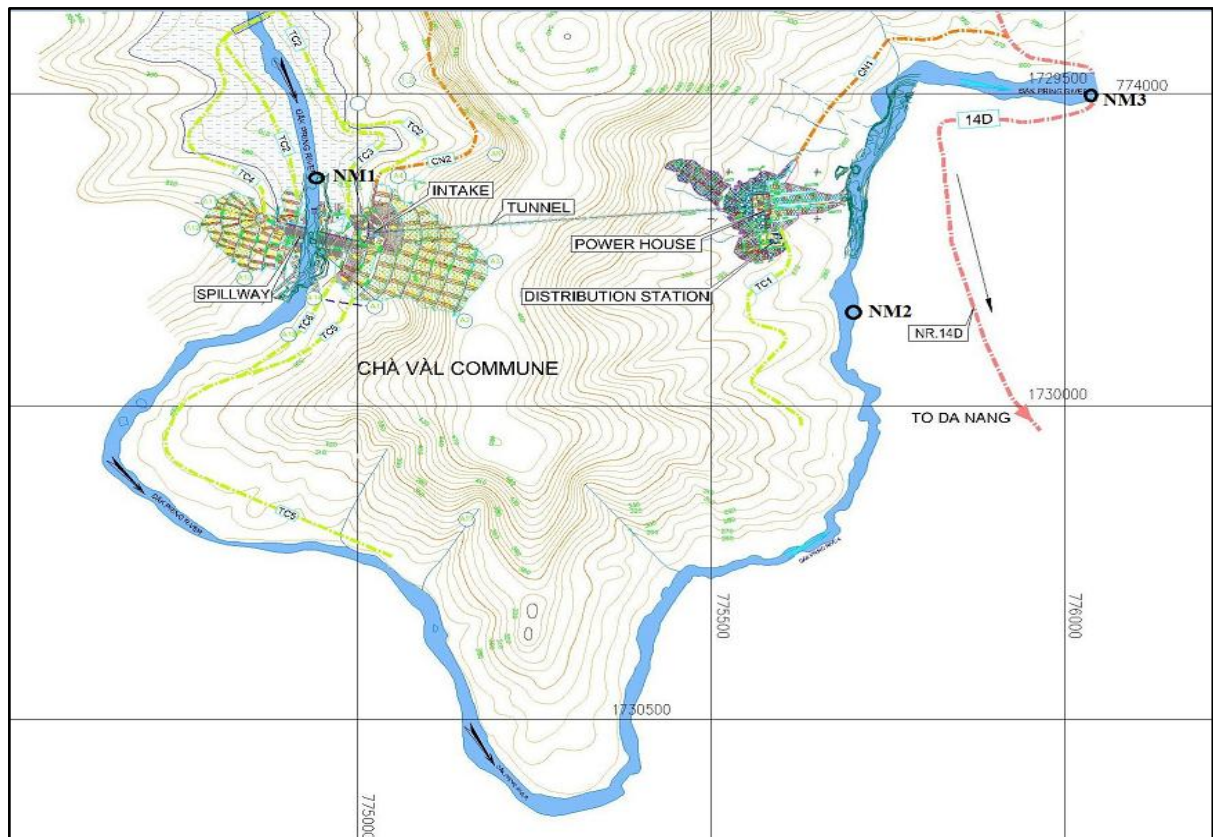


Figure3: Surface water sampling location map

Analysis results were compared with National technical regulation on surface water quality QCVN08:2008/BTNMT and given in the following table.

Table 11: Results of surface water quality analysis

Parameters	The 3 rd quarter sampling			The 4 th quarter sampling			QCVN 08: 2008/BTNMT				Remark
	NM1	NM2	NM3	NM1	NM2	NM3	A1	A2	B1	B2	
pH	7.72	8.07	8.13	7.3	7.5	7.6	6-8.5	6-8.5	5.5-9	5.5-9	Pass
Turbidity (mg/l)	10	25	27	8	23	26	Not specified	Not specified	Not specified	Not specified	-
DO (mg/l)	6.23	5.51	5.45	5.6	5.2	5.3	≥ 6	≥ 5	≥ 4	≥ 2	Pass
BOD ₅ (mg/l)	4	2	2	3.1	3.7	4.2	≤ 4	≤ 6	≤ 15	≤ 25	Pass
Total lubricant(mg/l)	<0.3	<0.3	0.4	< 0.3	< 0.3	< 0.3	≤ 0.01	≤ 0.02	≤ 0.1	≤ 0.3	Pass
Coliforms (MPN/100ml)	92	430	230	150	210	210	≤ 2,500	≤ 5,000	≤ 7,500	≤ 10,000	Pass

Notes:

- ✓ A1 – Use for the purpose of supplying the running water and others purposes as: A2, B1, B2
- ✓ A2 – Use for the purpose of supplying the running water after treating, preserving the aquatic life and others purposes as: B1, B2
- ✓ B1 –Use for the purpose of the irrigation and others purposes as: B2
- ✓ B2 – Use for the purpose of the river traffic and other purposes required the low quality water.

The analysis results show that most values measured in both two samplings are within the allowable limit given by the QCVN 08:2008/BTNMT.

In the 3rd quarter sampling, content of total lubricant in the sample of surface water taken at the upper dam site (NM1) and in the stream section between the dam and the powerhouse (NM2) is within the allowable limit given in Column B2. However, content of total lubricant in the sample of surface water taken at the lower dam site (NM3) is not qualified to the allowable limit of any column in the QCVN 08:2008/BTNMT.

In the 4th quarter sampling, except for total lubricant and DO, other sampled parameters are qualified to Column A1 of the QCVN 08:2008/BTNMT (the purpose of water supply for living). Content of DO satisfies allowable limit specified in Column A2 - Use for the purpose of supplying the running water after treating, preserving the aquatic life and others purposes as: B1, B2. Content of total lubricant in three surface water samples is only qualified to Column B2 - Use for the purpose of the river traffic and other purposes required the low quality water.

In addition, the results of the two samplings also indicate that stream water at Dac Ring Bridge area and at the middle of the dam site and the powerhouse site has higher turbidity than that at the area which is 300 m far from the dam site toward upstream.

VII. KEY ENVIRONMENTAL ISSUES & ACTIONS

7.1. Assessment of overcoming environmental issues in the 1st environmental monitoring (January – June 2015)

1. Runoff of materials was recorded on access roads to the dam construction site in the 2nd environmental monitoring.
2. Gathering equipment and machines in areas with roof was not strictly implemented by contractors.
3. Water spraying and covering materials during transportation were implemented by contractors; however, when frequency of materials delivery increases, these activities should be strengthened.
4. Analysis results of surface water quality in December 2015 show that total lubricants within the allowable limit and decreased compared to those in June 2015; delivery vehicles crossing the stream and vehicle wash in the stream were terminated.
5. Solid waste littering was reduced; however, it still occurred in some construction locations.
6. Blasting schedules were disclosed widely to all residents.
7. Workers not using personal protective equipment when working on site was recorded at some construction locations.
8. Contacting the nearest health clinic in the locality for first aid in case of incident was not undertaken by contractors.

7.2. Outstanding environmental issues in the 2nd environmental monitoring (July – December 2015)

At the 2nd monitoring visit, there are following contractors on site including: (i) Construction No.564 Co., Ltd, (ii) NgheAn Hydraulic Construction No.1 JSC and (iii) Construction No.47 JSC; (iv) Consulting Construction & Electric power development JSC.

Activities performed in the 2nd monitoring visit include: (i) Construction of dam; (ii) construction of diversion intake; (iii) construction of headrace tunnel; (iv) construction of powerhouse foundation; (v) reinforcement of talus slope at the powerhouse site; (vi) operation of concrete mixing plant and crushing and screening plant; (vii) transportation of spoils.

Outstanding environmental issues recorded in the 2nd environmental monitoring visit:

1. *Regarding erosion and landslide issues:* Negative talus slope on (i) access/operation road; (ii) access road to the dam site and (iii) the waste disposal

site near the powerhouse has not yet been reinforced and landslides happened in these locations.

2. *Regarding air and noise issues:* Significant dust emission was recorded at the concrete mixing plant and during materials delivery.
3. *Regarding management of construction wastes:* (i) Opening access road along stream banks increased the turbidity level of surface water; (ii) Large rocks gathered on access road along the stream and nearby the powerhouse may fall into the stream.
4. *Regarding management of hazardous wastes:* (i) Fueling areas of contractors were located outdoors without roof and oil resistant flooring; (ii) Refuse oil was contained in tanks carelessly covered and without oil resistant flooring.
5. *Regarding management of domestic wastes:* Waste pit of contractors were not deep enough without cover and water-proof lining.
6. *Regarding ensuring work safety and healthcare for workers:* (i) Lack of occupational safety signs and warning signs at construction locations; (ii) There were very few kinds of medicines provided for workers in medicine cabinets; (iii) A number of workers did not use personal protective equipment when working.

Table below summarizes the follow-up actions and the timeframe for implementation:

Table 12: Environmental issues and follow-up actions required

No.	Follow-up actions required	Timeframe	Responsible parties	Reporting to
1	Reinforcement of negative talus slope on access roads and the waste disposal site nearby the powerhouse.	From January 2016	Construction No.564 Co., Ltd Consulting Construction & Electric power development JSC	Construction supervisor CGC
2	Increase of water spraying to reduce dust emission at the concrete mixing plant. Water spraying on delivery route and covering loose materials during delivery should be carried out.	Immediately	Construction No.564 Co., Ltd Nghe An Hydraulic Construction No.1 JSC Consulting Construction & Electric power	Construction supervisor CGC

No.	Follow-up actions required	Timeframe	Responsible parties	Reporting to
			development JSC	
3	<ul style="list-style-type: none"> - Construction of access roads along the stream should be completed quickly to minimize increase of turbidity of the stream. - Delivery of rocks along access road to waste disposal sites or crushing plant to be used as materials. Installing of warning signs and minimizing gathering rocks in this area. 	From January 2016	Construction No.564 Co., Ltd Nghe An Hydraulic Construction No.1 JSC Consulting Construction & Electric Power Development JSC	Construction supervisor CGC
4	<ul style="list-style-type: none"> - Fuel should be contained in tanks and placed in hazardous with roof and high floor. - Collection, storage and treatment of refuse oil should be conducted at qualified areas (provided with roof, oil resistant flooring, catchment and oil collecting hole) 	From January 2016	Construction No. 47 JSC Consulting Construction & Electric Power Development JSC Nghe An Hydraulic Construction No.1 JSC Co., Ltd Construction No.564 Co., Ltd	Construction supervisor CGC
5	Waste pits should be located at high locations with proper size and cover.	From January 2016	Construction No. 47 JSC Consulting Construction & Electric Power Development JSC Nghe An Hydraulic Construction No.1	Construction supervisor CGC

No.	Follow-up actions required	Timeframe	Responsible parties	Reporting to
			JSC Construction No.564 Co., Ltd	
6	<ul style="list-style-type: none"> - Installation of warning signs at construction locations. - Provision of more types of medicines for workers - Monitoring of use of personal protective equipment by workers 	From January 2016	Consulting Construction & Electric Power Development JSCNghe An Hydraulic Construction No.1 JSC Construction No.564 Co., Ltd Construction No. 47, Co., Ltd	Construction supervisor CGC

VIII. ENVIRONMENTAL MONITORING SCHEDULE

Environmental monitoring visit is conducted every 6 months. Monitoring of surface water and air quality is implemented every 3 months. Schedule for the environmental monitoring visits during the construction phase is presented in table below:

Table 13: Environmental monitoring schedule

Activities	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
2015												
Preparation of the inception report												
The 1 st environmental monitoring												
Monitoring of air and surface water quality												
The 2 nd environmental monitoring												
2016												
Monitoring of air and surface water quality												
The 3 rd environmental monitoring												
The 4 th environmental monitoring												
2017												
Monitoring of air and surface water quality												
The 5 th environmental monitoring												

As per the schedule above, the 3rd environmental monitoring will be carried out in June 2016. During the time between two monitoring visits (the second and the third), there is one monitoring visit of surface water and air quality to be conducted in March 2016.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

At the 2nd environmental monitoring time (December 2015) main construction activities performed include: (i) Construction of dam; (ii) construction of diversion intake; (iii) construction of headrace tunnel; (iv) construction of powerhouse foundation; (v) reinforcement of talus slope at the powerhouse site; (vi) operation of concrete mixing plant and crushing and screening plant; (vii) transportation of spoils.

During the monitoring visit, the consultant evaluated compliance in the implementation of mitigation measures by contractors in comparison with those specified in the approved EMP. Furthermore, environmental quality assessment was also conducted to detect environmental issues arising in the construction phase. In this monitoring visit, the consultant recorded that some mitigation measures for environmental impacts were undertaken by contractors, specifically:

- Negative talus slope on access roads was not reinforced and landslide happened at these locations; the waste disposal site nearby the power house was not reinforced strictly and prone to landslide.
- Significant dust emission was recorded at the concrete mixing plant and the access road from the powerhouse site to Dak Ring Bridge. Contractors did not perform water spraying on delivery route.
- Refuelling stations were open-air with temporary roof or with no roof and oil resistant flooring.
- Refuse oil was not stored properly.
- Waste pits of contractors were not deep enough, without cover and water-proof lining.
- Warning signs were not installed at all construction locations; a number of workers did not use personal protective equipment when working.

In terms of environmental quality: Noise level measured in the 4th quarter sampling at the dam site is higher than that of the allowable limit of the QCVN 26:2010/BTNMT. In the 3rd quarter sampling total lubricant in surface water sample at lower area of the dam site (NM3) was higher than that specified in the QCVN 08:2008/BTNMT. However, in the 4th quarter sampling, this parameter is within the allowable limit. Other values are within allowable limit.

Recommendations


Based on outstanding environmental issues, the consultant has proposed the following recommendations in order to ensure compliance with the approved EMP as well as mitigate negative impacts on the environment:

- *Mitigation of erosion and landslide:* (i) Reinforcement of negative talus slope, especially at the locations where landslides occurred; (ii) regular monitoring of landslide-prone areas for timely treatment and overcoming; (iii) At waste disposal sites, contractors need to conduct leveling after disposing of wastes, planting trees or grass on talus slope to prevent landslide.
- *Mitigation of impacts on air quality:* (i) regular water spray on delivery roads; (ii) Covering loose materials during gathering delivery; (iii) Maintaining water spraying materials before crushing. *Mitigation of impacts by domestic solid waste and hazardous solid waste:* (i) Collecting rocks along access road and delivering them to waste disposal sites or crushing plant to be used as material. Installing of warning signs and minimizing gathering rocks in this area. (ii) Collection and storage of refuse oil in areas with roof, oil-resistant flooring, oil collecting hole and drainage trench; (iii) waste pits should be located at height with proper size and cover;
- *Measures for work safety and community health and safety:* (i) Installation of additional work safety signs and warning signs in construction locations; (ii) Monitoring of use of personal protective equipment by workers.

APPENDICES


Appendix1: Results of air and surface water quality analysis

Analysis results in September 2015



SỞ TÀI NGUYÊN & MÔI TRƯỜNG TP. ĐÀ NẴNG
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Số/No: 212-DVK/TKM

Ngày/date: 14/9/2015

PHIẾU KẾT QUẢ THỬ NGHIỆM (TEST REPORT)

(Phiếu kết quả này không được lập lại nếu không có sự đồng ý bằng văn bản của PTN)
 (This test report will not be reproduced without the written approval of Laboratory)

1. Tên mẫu (Name of sample): **KHÍ (AIR)**
2. Ký hiệu mẫu (Mark of sample): **K₁, K₂, K₃**
3. Số lượng mẫu (Quantity): **03**
4. Ngày nhận mẫu (Receiving date): **04/9/2015**
5. Ngày phân tích (Analysing date): **04-10/9/2015**
6. Khách hàng (Client): **Thủy điện Đak Pring (Dak Pring Hydropower Project)**
7. Địa chỉ (Address): **Xã ChaVal, Nam Giang, Quảng Nam (ChaVal Commune, Nam Giang District, Quang Nam Province)**
8. Kết quả thử nghiệm (Test results):

STT (Order)	Tên chỉ tiêu (Characteristics)	ĐV tính (Unit)	PP thử -Tbị (Test methods)	Kết quả (Test results)		
				K ₁	K ₂	K ₃
1	Tiếng ồn (Noise)	dBA	TCVN 7878 - 2:2010	69,4	66,7	58,8
2	Bụi tổng (TSP)	mg/m ³	TCVN 5067:1995	0,06	0,02	0,04
3	Bụi PM10 (TSP PM10)	mg/m ³	40 CFR Part 50 Appendix J	< 0,01	< 0,01	< 0,01

Ghi chú (Notes):

K₁: Mẫu khí lấy tại khu vực tuyến đập nhà máy Thủy điện.
 Sample taken at the dam site
 K₂: Mẫu khí lấy tại khu vực nhà máy Thủy điện.
 Sample taken at the powerhouse
 K₃: Mẫu khí lấy tại Quốc lộ 14D - khu vực cầu Đak Ring
 Sample taken at National Road 14D- near Dak Ring Bridge
 - Thông tin chi tiết về tình trạng mẫu thể hiện trong Biên bản lấy mẫu kèm theo.
 Details of these samples are shown in the Minutes of Sampling attached herein.

P. TRẠM TRƯỞNG
TRẠM QUAN TRẮC VÀ PHÂN TÍCH
 Head of Monitoring Station.

Xuyến
 Hoàng Thị Xuyến

GIÁM ĐỐC
 Director



Nguyễn Văn Anh



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Web : http://www.deec.vn



Số/No: 212-DVN/TKM

Ngày/date: 14/9/2015

PHIẾU KẾT QUẢ THỬ NGHIỆM (TEST REPORT)

(Phiếu kết quả này không được lập lại nếu không có sự đồng ý bằng văn bản của PTN)
(This test report will not be reproduced without the written approval of Laboratory)

- Tên mẫu (Name of sample): **NƯỚC MẶT (SURFACE WATER)**
- Ký hiệu mẫu (Mark of sample): **NM₁, NM₂, NM₃**
- Số lượng mẫu (Quantity): **03**
- Ngày nhận mẫu (Receiving date): **04/9/2015**
- Ngày phân tích (Analysing date): **04-10/9/2015**
- Khách hàng (Client): **Thủy điện Đak Pring (Dak Pring Hydropower Project)**
- Địa chỉ (Address): **Xã ChaVal, Nam Giang, Quảng Nam (ChaVal Commune, Nam Giang District, Quang Nam Province)**
- Kết quả thử nghiệm (Test results):

STT (Order)	Tên chỉ tiêu (Characteristics)	ĐV tính (Unit)	PP thử -Tbị (Test methods)	Kết quả (Test results)		
				NM ₁	NM ₂	NM ₃
1	pH	-	TCVN 6492:2011	7,72	8,07	8,13
2	Độ đục (Turbidity)	mg/L	TOA WQC 22A	10	25	27
3	DO	mg/L	TCVN 7325:2004	6,23	5,51	5,45
4	BOD ₅ (*)	mg/L	TCVN 6001 - 1:2008	4	2	2
5	Tổng dầu, mỡ (Total Lubricant)	mg/L	SMEWW 5520B:2012	< 0,3	< 0,3	0,4
6	Coliforms(*)	MPN/100mL	TCVN 6187-2:1996	92	430	230

Ghi chú:

NM₁: Mẫu nước sông Đak Pring, cách tuyến đập khoảng 300m về phía thượng lưu.

Surface water sample taken from Dak Pring River, 300m from the dam site toward upstream

NM₂: Mẫu nước sông Đak Pring giữa đập và nhà máy.

Surface water sample taken from Dak Pring River, section between the dam and the powerhouse

NM₃: Mẫu nước sông Đak Pring tại cầu Đắc Ring, cách nhà máy khoảng 300m về phía hạ lưu.

Surface water sample taken from Dak Pring River, at Dac Ring Bridge, 300m toward downstream

(*): Các chỉ tiêu được công nhận theo ISO/IEC 17025:2005 (VILAS 222)

Criteria are approved as ISO/IEC 17025:2005 (VILAS 222)

- Thông tin chi tiết về tình trạng mẫu thể hiện trong Biên bản lấy mẫu kèm theo.

Details of these samples are shown in the Minutes of Sampling attached herein.

TRẠM TRƯỞNG
TRẠM QUAN TRẮC VÀ PHÂN TÍCH
Head of Monitoring Station.



Xuyến
Hồng Thị Xuyến

GIÁM ĐỐC
Director




Nguyễn Văn Anh

PTN.QT01.BM05 * 01/6/2012 * 1/1




Analysis results in December 2015



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Số/No: 338-DVK/TKM

Ngày/date: 06/01/2016

PHIẾU KẾT QUẢ THỬ NGHIỆM

(TEST REPORT)

(Phiếu kết quả này không được lập lại nếu không có sự đồng ý bằng văn bản của PTN)
 (This test report will not be reproduced without the written approval of Laboratory)

1. Tên mẫu (Name of sample): **KHÍ (AIR)**

2. Ký hiệu mẫu (Mark of sample): **K₁, K₂, K₃**

3. Số lượng mẫu (Quantity): **03**

4. Ngày nhận mẫu (Receiving date): **29/12/2015**

5. Ngày phân tích (Analysing date): **29/12-05/01/2016**

6. Khách hàng (Client): **Thủy điện Đak Pring (Dak Pring Hydropower Project)**

7. Địa chỉ (Address): **Xã ChaVal, Nam Giang, Quảng Nam (ChaVal Commune, Nam Giang District, Quang Nam Province)**

8. Kết quả thử nghiệm (Test results):

STT (Order)	Tên chỉ tiêu (Characteristics)	ĐV tính (Unit)	PP thử -Tbị (Test methods)	Kết quả (Test results)		
				K ₁	K ₂	K ₃
1	Tiếng ồn (Noise)	dBA	TCVN 7878 - 2:2010	76,0	60,0	54,5
2	Bụi (TSP)	mg/m ³	TCVN 5067:1995	0,04	0,07	< 0,01
3	Bụi PM10 (TSP PM10)	mg/m ³	40 CFR Part 50 Appendix J	0,02	0,04	< 0,01

Ghi chú (Notes):

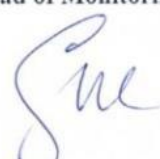
K₁: Mẫu khí lấy tại khu vực tuyến đập nhà máy Thủy điện.
 Sample taken at the dam site

K₂: Mẫu khí lấy tại khu vực nhà máy Thủy điện.
 Sample taken at the powerhouse

K₃: Mẫu khí lấy tại Quốc lộ 14D - khu vực cầu Đak Rìng
 Sample taken at National Road 14D- near Dak Ring Bridge


- Thông tin chi tiết về tình trạng mẫu thể hiện trong Biên bản lấy mẫu kèm theo.
 Details of these samples are shown in the Minutes of Sampling attached herein.

TRẠM TRƯỞNG
TRẠM QUAN TRẮC VÀ PHÂN TÍCH
 Head of Monitoring Station.




Trần Đình Sơn

GIÁM ĐỐC
 Director



Nguyễn Văn Anh

PTN.QT01.BM05 * 01/6/2012 * 1/1





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Số/No: 338-DVN/TKM

Ngày/date: 06/01/2016

PHIẾU KẾT QUẢ THỬ NGHIỆM (TEST REPORT)

(Phiếu kết quả này không được lập lại nếu không có sự đồng ý bằng văn bản của PTN)
(This test report will not be reproduced without the written approval of Laboratory)

1. Tên mẫu (Name of sample): **NUỐC MẶT (SURFACE WATER)**
2. Ký hiệu mẫu (Mark of sample): **NM₁, NM₂, NM₃**
3. Số lượng mẫu (Quantity): **03**
4. Ngày nhận mẫu (Receiving date): **29/12/2015**
5. Ngày phân tích (Analysing date): **29/12-05/01/2016**
6. Khách hàng (Client): **Thủy điện Đak Pring (Dak Pring Hydropower Project)**
7. Địa chỉ (Address): **Xã ChaVal, Nam Giang, Quảng Nam (ChaVal Commune, Nam Giang District, Quang Nam Province)**

8. Kết quả thử nghiệm (Test results):

STT (Order)	Tên chỉ tiêu (Characteristics)	ĐV tính (Unit)	PP thử - Tbị (Test methods)	Kết quả (Test results)		
				NM ₁	NM ₂	NM ₃
1	pH	-	TCVN 6492:2011	7,3	7,5	7,6
2	Độ đục (Turbidity)	mg/L	TOA WQC 22A	8	23	26
3	DO	mg/L	TCVN 7325:2004	5,6	5,2	5,3
4	BOD ₅ ^(*)	mg/L	TCVN 6001 - 2:2008	3,1	3,7	4,2
5	Tổng dầu, mỡ ^(*) (Total Lubricant)	mg/L	SMEWW 5520B:2012	< 0,3	< 0,3	< 0,3
6	Coliforms ^(*)	MPN/100mL	TCVN 6187-2:1996	150	210	210

Ghi chú:

NM₁: Mẫu nước sông Đak Pring, cách tuyến đập khoảng 300m về phía thượng lưu.

Surface water sample taken from Dak Pring River, 300m from the dam site toward upstream

NM₂: Mẫu nước sông Đak Pring giữa đập và nhà máy.

Surface water sample taken from Dak Pring River, section between the dam and the powerhouse

NM₃: Mẫu nước sông Đak Pring tại cầu Đắc Ring, cách nhà máy khoảng 300m về phía hạ lưu.

Surface water sample taken from Dak Pring River, at Dac Ring Bridge, 300m toward downstream

(*) : Các chỉ tiêu được công nhận theo ISO/IEC 17025:2005 (VILAS 222)

Criteria are approved as ISO/IEC 17025:2005 (VILAS 222)

- Thông tin chi tiết về tình trạng mẫu thể hiện trong Biên bản lấy mẫu kèm theo.

Details of these samples are shown in the Minutes of Sampling attached herein.

TRẠM TRƯỞNG
TRẠM QUAN TRẮC VÀ PHÂN TÍCH
Head of Monitoring Station.

GIÁM ĐỐC
Director



(Signature)



(Signature)

Nguyễn Văn Anh

PTN.QT01.BM05 • 01/6/2012 • 1/1 *Trần Đình Sơn*



Appendix2: Project documents**Decision on approval of the Environmental Impact Assessment Report for the Project**

BẢN SAO

ỦY BAN NHÂN DÂN
TỈNH QUẢNG NAM

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Số *400* /QĐ-UBND

Quảng Nam, ngày *19* tháng 12 năm 2013

QUYẾT ĐỊNH

Phê duyệt Báo cáo đánh giá tác động môi trường của Dự án thủy điện Đắk Pring tại xã Chà Vål, huyện Nam Giang, tỉnh Quảng Nam

ỦY BAN NHÂN DÂN TỈNH QUẢNG NAM

Căn cứ Luật Tổ chức HĐND và UBND ngày 26/11/2003;
Căn cứ Luật Bảo vệ môi trường ngày 29/11/2005;
Căn cứ Nghị định số 29/2011/NĐ-CP ngày 18/4/2011 của Chính phủ quy định về đánh giá môi trường chiến lược, đánh giá tác động môi trường, cam kết bảo vệ môi trường;
Căn cứ Thông tư số 26/2011/TT-BTNMT ngày 18/7/2011 của Bộ Tài nguyên và Môi trường quy định chi tiết một số điều của Nghị định số 29/2011/NĐ-CP ngày 18/4/2011 của Chính phủ quy định về đánh giá môi trường chiến lược, đánh giá tác động môi trường, cam kết bảo vệ môi trường;
Theo đề nghị của Giám đốc Sở Tài nguyên và Môi trường tại Tờ trình số 297/TTr-STNMT ngày 11 tháng 12 năm 2013 và hồ sơ kèm theo,

QUYẾT ĐỊNH:

Điều 1. Phê duyệt nội dung Báo cáo đánh giá tác động môi trường Dự án thủy điện Đắk Pring tại xã Chà Vål, huyện Nam Giang của Ban quản lý Dự án điện nông thôn Miền Trung (sau đây gọi là Chủ Dự án) với các nội dung chủ yếu như sau:

1. Phạm vi, quy mô của Dự án:

a) Phạm vi: Dự án thủy điện Đắk Pring có tổng diện tích khoảng 71 07 (theo Thông báo số 355/TB-UBND ngày 27/9/2013 của UBND tỉnh về chủ trương thu hồi đất để thực hiện dự án Nhà máy thủy điện Đắk Pring tại xã Chà Vål, huyện Nam Giang); giới hạn được xác định:

- Phía Đông: giáp xã Tà Bình, huyện Nam Giang;
- Phía Tây: giáp xã La ÊÊ, huyện Nam Giang;
- Phía Bắc: giáp xã Zuôi, huyện Nam Giang;
- Phía Nam: giáp xã Đắk Pring, Đắk Pree, huyện Nam Giang.

b) Quy mô (Theo Quyết định số 1422/QĐ-EVNCP ngày 04/4/2013 của Tổng Công ty Điện lực miền Trung), dự án có một số thông số chính như sau:

- Diện tích lưu vực F_{lv} : 296 km²;
- Công suất lắp máy N_{lm} : 7,5 MW;
- Số tổ máy: 02

- Số giờ vận động công suất lắp máy: 4,060 h;
- Điện lượng trung bình năm E: $30,45.10^6$ kWh;
- Mức nước dâng bình thường MNDBT: 287 m;
- Mức nước chết: 286 m;
- Mức nước già cỗi: 295,98 m;
- Dung tích hồ chứa: $3,22.10^6$ m³;
- Dung tích hữu ích: $0,36.10^6$ m³;
- Diện tích mặt hồ ứng với MNDBT: 0,36 km².

2. Yêu cầu bảo vệ môi trường đối với dự án: Chủ Dự án có trách nhiệm thực hiện những nội dung đã được nêu trong Báo cáo đánh giá tác động môi trường đã được phê duyệt và những yêu cầu bắt buộc sau:

a) Xây dựng phương án và tổ chức giám sát chặt chẽ việc chặt hạ cây trong khu vực lòng hồ, khu vực xây dựng các hạng mục công trình của Dự án được cấp thẩm quyền giao đất; có biện pháp phối hợp với kiểm lâm và chính quyền địa phương trong việc quản lý đội ngũ công nhân thi công xây dựng Dự án nhằm ngăn chặn các hành vi phá rừng, săn bắt động vật hoang dã trong và xung quanh khu vực thực hiện Dự án và các vùng phụ cận giáp với vùng thực hiện Dự án;

b) Xây dựng phương án thu dọn lòng hồ, phương án xử lý chất độc OB trình Sở Tài nguyên và Môi trường thẩm định và phê duyệt; Hợp đồng với đơn vị chức năng tiến hành rà phá bom mìn, chất độc hóa học chiến tranh còn tồn lưu trước khi tích nước;

c) Phải đảm bảo dòng chảy tối thiểu, thực hiện chế độ điều tiết dòng chảy, bảo đảm nhu cầu sử dụng nước và bảo vệ môi trường sinh thái cho đoạn sông sau cửa xả nhà máy và vùng hạ du sau đập Thủy điện Đăk Pring, đặc biệt là đoạn sông chết sau đập theo quy định tại Nghị định 112/2008/NĐ-CP ngày 20/10/2008 về quản lý, bảo vệ, khai thác tổng hợp tài nguyên và môi trường các hồ chứa thủy điện, thủy lợi và Nghị định số 120/2008/NĐ-CP ngày 01/12/2008 về quản lý lưu vực sông;

d) Phối hợp với chính quyền địa phương thực hiện công tác giải phóng mặt bằng theo đúng quy định hiện hành; quy hoạch, bố trí các lần trại công nhân, kho tàng chứa nguyên vật liệu, bãi chứa chất thải những nơi phù hợp, bảo đảm các yêu cầu về an toàn và bảo vệ môi trường;

e) Thực hiện đầy đủ các biện pháp nhằm giảm thiểu các tác động tiêu cực đến chất lượng không khí, tiếng ồn trong quá trình thi công và vận hành công trình, đảm bảo xử lý đạt Quy chuẩn Việt Nam về tiếng ồn như cam kết trong Báo cáo đánh giá tác động môi trường nhằm hạn chế các tác động bất lợi đến hệ động thực vật khu vực xung quanh;

f) Thu gom, xử lý chất thải rắn sinh hoạt và các loại chất thải rắn xây dựng trong quá trình thi công xây dựng công trình, bảo đảm các yêu cầu về vệ

RÁN SẠO

sinh môi trường hiện hành, an toàn trong và sau khi đóng cửa, đảm bảo nước hồ sau khi tích nước không bị ô nhiễm;

g) Tuân thủ các quy định hiện hành về an toàn thi công và phòng chống cháy nổ; lập kế hoạch an toàn thi công, ứng cứu sự cố và bảo đảm ứng phó kịp thời các sự cố xảy ra; tiến hành công tác kiểm tra an toàn và thông báo cho các đơn vị liên quan, cộng đồng dân cư ở khu vực thượng và hạ lưu biết để phối hợp ứng cứu khi xảy ra sự cố;

h) Thực hiện đầy đủ chương trình giám sát môi trường như đã nêu trong Báo cáo đánh giá tác động môi trường, báo cáo kết quả giám sát môi trường cho Sở Tài nguyên và Môi trường, Phòng Tài nguyên và Môi trường huyện Nam Giang để theo dõi, quản lý. Số liệu giám sát phải được cập nhật đầy đủ và lưu giữ làm cơ sở để cơ quan quản lý nhà nước kiểm tra, đánh giá diễn biến về chất lượng môi trường của khu vực Dự án;

i) Lập, phê duyệt và niêm yết công khai kế hoạch quản lý môi trường của Dự án tại UBND xã Chà Vål, trong đó chỉ rõ: chủng loại, khối lượng các loại chất thải; công nghệ, thiết bị xử lý chất thải; mức độ xử lý theo các thông số đặc trưng của chất thải so với quy chuẩn quy định; các biện pháp khác về bảo vệ môi trường; nghiêm túc thực hiện các yêu cầu về bảo vệ môi trường trong giai đoạn chuẩn bị đầu tư và giai đoạn thi công xây dựng Dự án;

k) Thiết kế chi tiết và xây lắp các công trình xử lý môi trường theo đúng quy định hiện hành về đầu tư và xây dựng công trình; lập hồ sơ đề nghị kiểm tra, xác nhận việc đã thực hiện các công trình, biện pháp bảo vệ môi trường phục vụ giai đoạn vận hành của Dự án gửi cơ quan có thẩm quyền để kiểm tra, xác nhận trước khi đưa dự án vào vận hành chính thức theo quy định tại Thông tư số 26/2011/TT-BTNMT ngày 18 tháng 7 năm 2011 của Bộ Tài nguyên và Môi trường quy định chi tiết một số điều của Nghị định số 29/2011/NĐ-CP ngày 18 tháng 4 năm 2011 của Chính phủ quy định về đánh giá môi trường chiến lược, đánh giá tác động môi trường, cam kết bảo vệ môi trường.

Điều 2. Báo cáo đánh giá tác động môi trường của Dự án thủy điện Đak Pring tại xã Chà Vål, huyện Nam Giang, tỉnh Quảng Nam được phê duyệt tại quyết định này là cơ sở để các cơ quan quản lý nhà nước có thẩm quyền kiểm tra, kiểm soát việc thực hiện công tác bảo vệ môi trường của Dự án.

Điều 3. Trong quá trình thực hiện nếu Dự án có những thay đổi so với các khoản 1 và 2 Điều 1 của quyết định này, Chủ dự án phải có văn bản báo cáo UBND tỉnh Quảng Nam, Sở Tài nguyên và Môi trường và chỉ được thực hiện những nội dung thay đổi sau khi được UBND tỉnh Quảng Nam phê duyệt.

Điều 4. Giao Sở Tài nguyên và Môi trường chủ trì, phối hợp với UBND huyện Nam Giang, UBND xã Chà Vål thường xuyên kiểm tra, giám sát việc thực hiện các nội dung và các biện pháp bảo vệ môi trường trong Báo cáo đánh giá tác động môi trường đã được phê duyệt và các yêu cầu nêu tại Điều 1 của quyết định này.

Điều 5. Chánh Văn phòng UBND tỉnh, Giám đốc các Sở: Tài nguyên và Môi trường, Công Thương, Nông nghiệp và Phát triển nông thôn, Kế hoạch và Đầu tư, Xây dựng; Chủ tịch UBND huyện Nam Giang; Chủ tịch UBND xã Chu Văn, Giám đốc Ban quản lý Dự án điện nông thôn Miền Trung, thủ trưởng các đơn vị và cá nhân có liên quan có trách nhiệm thi hành quyết định này.

Quyết định này có hiệu lực kể từ ngày ký 1/1/2013.

Nơi nhận:

- Như điện 5;
- PCT TT Nguyễn Ngọc Quang;
- LĐVP;
- PC 49 CA tỉnh;
- Lưu: VT, KTN.

TM. ỦY BAN NHÂN DÂN
KT. CHỦ TỊCH
PHÓ CHỦ TỊCH



Nguyễn Ngọc Quang

Quyết định phê duyệt Báo cáo ĐTM này đã được đăng ký Nhà nước tại Sở Tài nguyên và Môi trường Quảng Nam.

Số đăng ký: 22 DK/ĐTM ngày 19 tháng 12 năm 2013.

SỞ TÀI NGUYÊN VÀ MÔI TRƯỜNG

KT. GIÁM ĐỐC
PHÓ GIÁM ĐỐC

CHỨNG THỰC

BẢN SAO ĐÚNG VỚI BẢN CHÍNH

Ngày: 19/02/14

Số: 18 Quyển số: 7

UBND P. HOA THUẬN ĐÔNG
QU. CH. PH. N. N. N. N. N. N.

KT. CHỦ TỊCH
PHÓ CHỦ TỊCH



Nguyễn Ngọc Dũng
Nguyễn Khoa Diệu Thanh



**QUANG NAM PROVINCIAL
PEOPLE'S COMMITTEE**
No. 4000 QĐ/UBND

SOCIALIST REPUBLIC OF VIETNAM
Independence – Freedom – Happiness
Quang Nam, 19 December, 2013

DECISION ON

Approval of Environmental Impact Assessment Report of DakPring Hydropower Project in Cha Val Commune, Nam Giang District, Quang Nam Province

QUANG NAM PROVINCIAL PEOPLE'S COMMITTEE

Pursuant to Law on Organization of People's Councils and People's Committee, dated 26/11/2013

Pursuant to Law on Environmental Protection, dated 29/11/2005

Pursuant to Government's Decree No. 29/2011/NĐ-CP providing strategic environmental assessment, environmental impact assessment and environmental protection commitment

Pursuant to Circular No. 26/2011/TT-BTNMT, dated 18/07/2011 by MONRE detailing a number of articles of the Government's Decree No. 29/2011/ND-CP of 8 April 2011 on strategic environmental assessment, environmental impact assessment and environmental protection commitment

Pursuant to proposal of the Director of Quang Nam Department of Natural Resources and Environment under Submission No. 297/TTr-STNMT, dated 11/12/2013 and attached documents.

DECIDES

Article 1. Approval of Environmental Impact Assessment Report of DakPring Hydropower Project in Cha Val Commune, Nam Giang District, Quang Nam Province of the Central Rural Electricity Project Management Board (hereinafter referred to as the Project Investor).

Article 2. Requirements on environmental protection for the Project: The Project investor has responsibility to take all measures envisaged in the approved EIA report and the following involuntary actions:

- a) Planning and close monitoring of cutting down trees within reservoir bed, construction sites of the Project that were allocated by competent agencies; Cooperation with forest rangers and local authorities in management of construction workers to prevent workers from deforestation, hunting and poaching within and surrounding the project area and in its vicinity;
- b) Preparing reservoir clearance plan, OB toxic substance treatment plan to submit to Quang Nam DONRE for appraisal and approval; Contracting a specialized unit for bomb, mine and explosive ordnances before conducting water retaining;

- c) Ensuring minimum flow, regulating flow, ensuring demand of water use and protection of ecological environment for the river section behind discharge gate of powerhouse and downstream area behind the dam of DakPring Hydropower Plant, especially dry river section behind the dam in accordance with Decree No. 112/2008/NĐ-CP, dated 20/10/2008 on management, protection and integrated exploitation of resources and environment of hydropower and irrigation reservoirs and Decree No. 120/2008/NĐ-CP, dated 01/12/2008 on river basin management.
- d) Cooperation with local government in site clearance performance in compliance with current regulations; planning and arrangement of worker camps, materials storages, waste disposal sites satisfying requirements on safety and environmental protection;
- e) Meaningful implementation of mitigation measures for negative impacts on air quality, noise during construction and operation to ensure compliance with Vietnam National Technical Regulation on noise as committed in EIA report to minimize negative impacts on flora in surrounding areas.
- f) Collection and treatment of domestic and construction solid wastes in compliance with current regulations on environmental hygiene and safety during and after closing the reservoir to ensure reservoir water is not polluted.
- g) Compliance with current regulations on work safety and fire and explosion prevention and fighting, preparation of plan on work safety and response to incidents; inspection of safety and inform relevant stakeholders and residents in the upstream and downstream areas to coordinate in responding to incidents;
- h) Adequate implementation of environmental monitoring as envisaged in EIA report, reporting results of environmental monitoring to Department of Natural Resources and Environment of Quang Nam Province and Division of Natural Resources and Environment of Nam Giang District for monitoring and management. Monitoring data must be updated and stored and considered as the basis for state agencies to inspect and assess environmental quality in the project area.
- i) Preparation, approval and posting environmental management plan of the Project at Cha Val CPC office, specifying type and quantity of wastes; waste treatment technology and equipment; treatment level according to specific parameters vis-à-vis allowable limits of regulations; other environmental protection measures; meaningfully implementation of requirements on environmental protection in preparation and construction phases of the Project.
- j) Designing and forming environmental treatment works in accordance with current regulations on work investment and construction; preparation of documents on proposals on inspection and confirmation of completion of works and measures for environmental protection in operation phase to submit to respective competent agency before the Project is officially put into operation as per Circular No. 26/2011/TT-BTNMT, dated 18/07/2011 by MONRE, detailing a number of articles of the Government's Decree No. 29/2011/ND-CP of 8 April 2011 on strategic

environmental assessment, environmental impact assessment and environmental protection commitment.

Article 2. EIA report of DakPring Hydropower Project in Cha Val Commune, Nam Giang District, Quang Nam Province approved under this decision is the basis for competent State agencies to inspect and control the implementation of environmental protection of the Project.

Article 3. During implementation, if any changes compared to Clauses 1 and 2 of Article 1 of this decision arise, Project investor has to report to Quang Nam PPC and Quang Nam DONRE in writing and no change to be happened without prior approval of Quang Nam PPC.

Article 4. Quang Nam DONRE was assigned to preside over and cooperate with Nam GiangDPC, Cha Val CPC to examine and monitor the implementation of environmental protection measures envisaged in the approved EIA report and requirements under Articles of this decision.

Article 5. Chief of PPC Office, Director of Departments of Natural Resources and Environment, Industry and Trade, Agriculture and Rural Development, Investment and Planning, Construction, Nam GiangDPC Chairman, Cha Val CPC Chairman, Director of the Central Rural Electricity Project Management Board, Head of relevant units and individuals are responsible for implementation of this decision.

This decision takes effect as from the date of signing.

Receivers:
As aforesaid in Article 5.
Saved in office

ON BEHALF OF PEOPLE'S COMMITTEE
PP. CHAIRMAN
DEPUTY CHAIRMAN
Signed and sealed

Nguyen Ngoc Quang

Confirmation of completion of site clearance and compensation payment

UBND HUYỆN NAM GIANG
TRUNG TÂM PHÁT TRIỂN
QUÝ ĐẤT
Số : 23 /XNHTGPMB

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc
Nam Giang, ngày 31 tháng 12 năm 2014

XÁC NHẬN
HOÀN THÀNH BỒI THƯỜNG GIẢI PHÓNG MẶT BẰNG
Công trình: Thủy điện Đắk Pring
Địa điểm: Xã Chà Vål, huyện Nam Giang, tỉnh Quảng Nam

Kính gửi: Ban Quản lý dự án Điện nông thôn miền Trung

Căn cứ văn bản số 224/CV-UBND ngày 07/5/2013 của UBND huyện Nam Giang về việc chấp thuận phương án tổng thể về bồi thường, hỗ trợ và tái định cư dự án nhà máy thủy điện Đắk Pring;



Căn cứ các Quyết định từ số 2057/QĐ-UBND đến số 2108/QĐ-UBND ngày 04/9/2014, các quyết định từ số 2277/QĐ-UBND đến số 2318/QĐ-UBND ngày 18/9/2014 của UBND huyện Nam Giang về việc thu hồi đất của hộ gia đình, cá nhân để thực hiện dự án nhà máy thủy điện Đắk Pring, hạng mục khu đầu mối, đường thi công vận hành, khu nhà máy, lòng hồ và đường dây truyền tải, cấp điện thi công 35KV;

Căn cứ các Quyết định số 2348/QĐ-UBND ngày 30/9/2014, số 2393/QĐ-UBND ngày 15/10/2014 và số 2834/QĐ-UBND ngày 09/12/2014 của UBND huyện Nam Giang về việc phê duyệt phương án bồi thường, hỗ trợ và giải phóng mặt bằng công trình thủy điện Đắk Pring, hạng mục: Đường thi công kết hợp quản lý vận hành, cụm đầu mối, khu nhà máy, lòng hồ và đường dây truyền tải, cấp điện thi công 35KV;

Ban Quản lý dự án Điện nông thôn miền Trung đã phối hợp cùng Trung tâm Phát triển quỹ đất huyện Nam Giang, UBND xã Chà Vål đã thực hiện xong việc chi trả tiền bồi thường, hỗ trợ cho các hộ gia đình, cá nhân bị ảnh hưởng bởi dự án nhà máy thủy điện Đắk Pring theo các Quyết định đã phê duyệt.

Trung tâm Phát triển quỹ đất huyện Nam Giang xác nhận Ban QLDA thực hiện xong công tác chi trả tiền bồi thường, hỗ trợ cho các hộ dân bị ảnh hưởng, hoàn thành công tác bồi thường giải phóng mặt bằng cho tất cả các hạng mục thuộc dự án nhà máy thủy điện Đắk Pring tại xã Chà Vål, huyện Nam Giang, tỉnh Quảng Nam để làm cơ sở cho Ban QLDA Điện nông thôn miền Trung thực hiện các bước tiếp theo.

Nơi nhận:
- Như trên;
- UBND huyện (b/c);
- Lưu TTPTQĐ;

GIẤM ĐỌC


NGUYỄN CÔNG BÌNH



**NAM GIANG DISTRICT PEOPLE'S
COMMITTEE
CENTER FOR LAND FUND
DEVELOPMENT**

No.:23/XNHTGPMB

**SOCIALIST REPUBLIC OF VIETNAM
Independence – Freedom – Happiness**

Nam Giang, 31 December, 2014

**CONFIRMATION OF
COMPLETION OF SITE CLEARANCE AND COMPENSATION PAYMENT**

Project: DakPring Hydropower Project

Location: Cha Val Commune, Nam Giang District, Quang Nam Province

To: Central Rural Electricity Project Management Board

Pursuant to Letter no. 224/CV-UBND dated 07/05/2013 by Nam Giang District People's Committee on approval of overall compensation, assistance and resettlement plan for DakPring Hydropower Project;

Pursuant to Decisions from no. 2057/QD-UBND to no.2108/QD-UBND, dated 04/09/2014, Decisions from no. 2277/QD-UBND to no. 2318/QD-UBND dated 18/09/2014 by Nam GiangDPC on acquisition of land of households, individuals for implementation of DakPring Hydropower Plant, head works, access roads, powerhouse, reservoir and 35kV transmission line;

Pursuant to Decisions no. 2348/QD-UBND dated 30/09/2014, no.2393/QD-UBND dated 15/10/2014 and no.2834/QD-UBND dated 09/12/2014 by Nam GiangDPC, approving detailed compensation and assistance plan for DakPring Hydropower Project, components: access roads, head works, powerhouse, reservoir, 35kV transmission line;

The Central Rural Electricity Project Management Board cooperated with Center for Land Fund Development of Nam Giang District, and Cha Val CPC to complete compensation and assistance payment to households and individuals affected by DakPring Hydropower Project as per approval decisions.

Center for Land Fund Development of Nam Giang District has confirmed that Project Management Board completed compensation and assistance payment to affected households and individuals and site clearance for all project components in Cha Val Commune, Nam Giang District, Quang Nam Province which is the basis for the Central Rural Electricity Project Management Board to take next steps.

Receivers:

- As aforementioned;
- DPC (to report);
- Saved by DCLFD;

DIRECTOR

Signed and sealed

NGUYEN CONG BINH

Announcement about site safe and free from bomb and explosive ordnances

**BỘ TƯ LỆNH QUÂN KHU 5
CÔNG TY TNHH MTV
ĐẦU TƯ XÂY DỰNG VẠN TƯỜNG**

S6: 1075/TB-CT

CỘNG HOÀ XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Đà Nẵng, ngày 29 tháng 9 năm 2014

THÔNG BÁO AN TOÀN
MẶT BẰNG ĐÃ ĐƯỢC RÀ PHÁ BOM Mìn, VẬT NỔ

Kính gửi :

- Ban Quản lý dự án Điện nông thôn miền Trung;
- Các đơn vị xây lắp có liên quan trên địa bàn.

Thực hiện Hợp đồng thi công và phá bom mìn số: 289/10/13/HĐ-CREB-KH ngày 17 tháng 10 năm 2013 giữa Ban Quản lý dự án Điện nông thôn miền Trung và Công ty TNHH MTV Đầu tư xây dựng Vạn Tường về việc thực hiện Gói thầu số 18 - DPR: Thi công và phá bom mìn, Dự án: Nhà máy thủy điện Đắk Pring, tỉnh Quảng Nam.

Nay, Công ty TNHH MTV Đầu tư xây dựng Vạn Tường xin thông báo:

* Kể từ ngày 29 tháng 9 năm 2014, toàn bộ mặt bằng Dự án nhà máy thủy điện Đăk Pring đã được rà phá và xử lý xong bom mìn, vật nổ, đủ điều kiện để Chủ đầu tư tiến hành các công việc tiếp theo của mình.

* Phạm vi mặt bằng, độ sâu, mốc ranh giới an toàn rà phá bom mìn, vật nổ được xác định trên thực địa bằng các cọc bê tông và cọc gỗ sơn đỏ và bản vẽ hoàn công kèm theo, với tổng diện tích đã được rà phá và xử lý xong bom mìn, vật nổ theo đúng yêu cầu của Chủ đầu tư. Cụ thể như sau :

a. Phạm vi mặt bằng: Theo đúng ranh giới cọc mốc do chủ đầu tư bàn giao tại hiện trường (trùng với mặt bằng cần rà phá theo yêu cầu hợp đồng).

b. Tổng diện tích rà phá bom mìn, vật nổ hoàn thành: **35,71 ha**; Trong đó:

+ Rà phá bom mìn, vật nổ trên can : 35,09 ha

+ Rà phá bom mìn, vật nổ dưới nước : 0,62 ha

c. Độ sâu rà phá bom mìn, vật nổ :

+ Rà phá bom mìn, vật nổ trên can đến độ sâu 0,3m : 15,91 ha

+ Rà phá bom mìn, vật nổ trên can đến độ sâu 3m	: 29,14 ha
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+ Rà phá bom mìn, vật nổ trên can đến độ sâu 5m	: 5,95 ha
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+ Rà phá bom mìn, vật nổ dưới nước đến độ sâu 5m	: 0,62 ha
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(Tính từ mặt đất tự nhiên hoặc đáy nước hiện tại trở xuống)

d. Hành lang an toàn :

+ Đường thi công vận hành: Tính từ chân ta luy thiết kế ra mỗi bên 3m

+ Khu phụ trợ, lán trại; Cụm công trình đầu mối; Khu nhà máy: Tính từ mép chu vi đường biên ngoài ra 5m

Công ty TNHH MTV Đầu tư xây dựng Vạn Tường xin thông báo đến Chủ đầu tư được biết để triển khai các công việc tiếp theo theo ranh giới khu vực đã rà phá bom mìn; ngoài phạm vi diện tích và độ sâu kể trên Công ty TNHH MTV Đầu tư xây dựng Vạn Tường không chịu trách nhiệm. 11/6

Nơi nhận:

- Như trên;

- Lulu VT

VT.OT.10/B.33



Đại tá Lê Đình Phúc

Lần BH: 03



**HIGH COMMAND OF MILITARY REGION 5
VAN TUONG CONSTRUCTION
INVESTMENT ONE MEMBER COMPANY
LTD.**

No.:1075/TB-CT

**SOCIALIST REPUBLIC OF VIETNAM
Independence – Freedom – Happiness**

Da Nang, 29 September, 2014

**ANNOUNCEMENT ABOUT
SITE SAFE AND FREE FROM BOMB AND EXPLOSIVE ORDNANCES**

To: - Central Rural Electricity Project Management Board

- Related contractors

Pursuant to Contract no. 289/10/13/HĐ-CREB-KH on bomb and mine detection and disposal signed on 17/10/1013 between Central Rural Electricity Project Management Board and Van Tuong Construction Investment One-member Company Ltd., implementing Package 18-DPR: Detection and disposal of bomb, mine and explosive ordnance for DakPring Hydropower Plan, Quang Nam Province.

Van Tuong Construction Investment One-member Company Ltd. has now announced that:

* As from 29/09/2014, the entire site of DakPring Hydropower Project is safe and free from bomb, mine and explosive ordnance and satisfied the conditions for which Investor can conduct its works.

* Area, depth and demarcation of detection and disposal is determined on field by concrete piles or red painted wooden piles and also shown on shop-drawing indicating total area of site free of bomb, mine and explosive ordnance as per requirement of Investor, specifically:

a. Area of site: the same as the demarcation that was handed over by Investor on field (the same as the area specified in the contract)

b. Total area to which the detection and disposal were completed: 35.71ha; of which:

+ Detection and disposal of bomb, mine and explosive ordnance on land: 35.09ha

+ Detection and disposal of bomb, mine and explosive ordnance in water: 0.62ha

c. Depth for detection and disposal of bomb, mine and explosive ordnance:

+ Detection and disposal of bomb, mine and explosive ordnance on land in the depth of 0.3m: 15.91ha

+ Detection and disposal of bomb, mine and explosive ordnance on land in the depth of 3m: 29.14ha

+ Detection and disposal of bomb, mine and explosive ordnance on land in the depth of 5m: 5.95ha

+ Detection and disposal of bomb, mine and explosive ordnance in water in the depth of 5m: 0.62ha

d. Right of Way:

+ Temporary service roads: 3m far from talus foot to each sides

+ Auxiliary area, camps, head works, powerhouse: 5m far from the edge of perimeter of the outer line

Van Tuong Construction Investment One-member Company Ltd. has now notified Investor of the completion of bomb, mine and explosive ordnance detection and disposal so that Investor can carry out next steps within the area free of bomb and explosive ordnance; The Company is not responsible for the area outside the aforementioned area and the depth.

Receiver:


- As aforesaid;
- Save in office

GENERAL DIRECTOR

(Signed and sealed)

Colonel Le DinhPhuc

Announcement about rock blasting in DakPring Hydropower Project area to relevant agencies


ISO 9001-2008

CÔNG TY CP XÂY DỰNG 47
CÔNG TRƯỜNG ĐẮK PRING

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Số: 09 / TB-CT
(V/v thông báo nổ mìn)

Chà Val, ngày 19 tháng 8 năm 2015

THÔNG BÁO

Kính gửi : - UBND huyện Nam Giang, tỉnh Quảng Nam;
- Công an huyện Nam Giang;
- BCH quân sự huyện Nam Giang;
- UBND xã Chà Val, huyện Nam Giang;
- Ban quản lý Công trình thủy điện Đăk Pring;
- Các đơn vị tham gia thi công gần khu vực nổ mìn.

Căn cứ quyết định số : 2814 /QĐ-UBND ngày 11 tháng 8 năm 2015 của UBND tỉnh Quảng Nam, về việc cấp giấy phép sử dụng Vật liệu nổ công nghiệp cho Công ty cổ phần xây dựng 47 sử dụng VLNCN để thi công Gói thầu số 05-DPR: Xây dựng Đường hầm và Cửa nhận nước, dự án nhà máy thủy điện Đăk Pring tại xã Chà Val, Huyện Nam Giang, Tỉnh Quảng Nam.

Nay Công trường thi công Đường hầm và Cửa nhận nước, dự án nhà máy thủy điện Đăk Pring - Công ty cổ phần xây dựng 47, xin thông báo thời gian nổ mìn và hiệu lệnh nổ mìn như sau:

I. Thời gian nổ mìn:

1. Thời gian tiến hành nổ mìn từ nay đến ngày 05/8/2016;
2. Thời gian nổ mìn trong ngày :
 - a. **Nổ mìn mở Cửa vào và ra Đường hầm:**
 - Trưa từ 11 giờ 30 phút đến 12 giờ 30 phút;
 - Chiều từ 17 giờ 30 phút đến 18 giờ 30 phút.
 - b. **Nổ mìn phá Đường hầm dẫn nước:**
 - Khi khoan đá xong là tiến hành nạp thuốc nổ mìn . Thời gian nổ mìn phá Đường hầm không kể thời gian nổ mìn khi nào trong ngày .

II. Hiệu lệnh nổ mìn:

- a. **Nổ mở Cửa vào và ra Đường hầm:**
 - + Cờ + biển báo để báo hiệu khu vực nổ mìn.
 - + Tín hiệu thứ nhất: (*Tín hiệu nạp mìn*), bằng một hồi còi dài hoặc bằng một phát mìn tín hiệu báo, thì yêu cầu tất cả mọi người, gia súc và thiết bị xe máy . . . không liên quan đến việc nạp, nổ mìn phải rút ra khỏi giới hạn vùng nguy hiểm;
 - + Tín hiệu thứ hai: (*Tín hiệu khởi nổ*), bằng hai hồi còi dài hoặc bằng hai phát mìn liên tiếp báo : sau tín hiệu này từ 03 đến 05 phút sẽ nổ mìn;
 - + Tín hiệu thứ ba: (*Tín hiệu báo yên*), bằng ba hồi còi dài liên tiếp, tín hiệu báo bãi mìn đã được kiểm tra nổ hết và đảm bảo an toàn . Tất cả mọi người, gia súc và thiết bị xe máy . . được trở lại hoạt động bình thường.
- b. **Nổ mìn phá Đường hầm dẫn nước:**

- Về tín hiệu báo hiệu thực hiện như 3 tín hiệu của Hiệu lệnh Nổ mìn mở Cửa vào và ra Đường hầm. Về tín hiệu Còi vẫn giữ như trên nhưng thay tín hiệu nổ mìn báo bằng tín hiệu cắt mở điện ;

III. Bán kính vùng nguy hiểm:

Khi nghe có tín hiệu báo **nổ mìn**, mọi người và thiết bị xe máy . . . không có liên quan đến công tác nổ mìn phải rời xa khu vực nổ mìn (theo sự hướng dẫn của lực lượng canh gác nổ mìn) :

a. Nổ mở Cửa vào và ra Đường hầm:

- + Đối với người, súc vật là ≥ 300 mét;
- + Đối với thiết bị máy móc ≥ 150 mét.

b. Nổ mìn phá Đường hầm dẫn nước:

- + Về khoảng cách an toàn áp dụng theo qui phạm nổ mìn trong Đường hầm;
- + Khoảng cách an toàn chỉ áp dụng cho CBCN đang làm việc trong nội bộ của đơn vị, không áp dụng đối với nhân dân địa phương và đơn vị xung quanh.

Vậy Công trường thủy điện Đường hầm và Cửa nhận-nước, dự án nhà máy thủy điện Đăk Pring - Công ty cổ phần xây dựng 47 xin thông báo để các cơ quan, địa phương, các đơn vị tham gia thi công gần khu vực nổ mìn được rõ và thông báo rộng rãi cho nhân dân, người trong đơn vị làm việc (hoặc đi lại) xung quanh khu vực nổ mìn biết, để không được đến gần khu vực trên vào thời gian đã thông báo.

Xin trân trọng kính báo./.

Nơi nhận

- Như trên
- Lưu: CT, BC Công ty.



Đinh Huy Hoàng

**CONSTRUCTION NO. 47 JOINT STOCK
COMPANY****SOCIALIST REPUBLIC OF VIETNAM****Independence – Freedom – Happiness**

No.:09/TB-CT

Cha Val, 19 August, 2015

(Regarding blasting announcement)

ANNOUNCEMENT**To:** - NamGiang District People's Committee, Quang Nam Province

- Nam Giang District Public Security
- Nam Giang District Military Command
- DakPring Hydropower Project Management Unit
- Agencies involved in construction nearby blasting areas

Pursuant to Decision No. 2814/10/13/QĐ-UBND dated 11/08/2015 of Quang Nam Provincial People's Committee, on granting permission for use of industrial explosives to Construction No. 47 Joint Stock Company to undertaken construction package no. 05-DPR: Construction of tunnel and intake gate of DakPring Hydropower Project in Cha Val Commune, Nam Giang District, Quang Nam Province.

The Site for Construction of tunnel and intake gate of DakPring Hydropower Project under Construction No. 47 Joint Stock Company now announces blasting time and signal as follows:

I. Blasting time:

1. Blasting time: from now to 05/08/2016;
2. Blasting time during the day:
 - a. Blasting for opening entrance and exit of the tunnel
 - At lunch: from 11:30 to 12:30
 - In the afternoon: 17:30 to 18:30
 - b. Blasting for opening headrace tunnel
 - When rock drilling is finished, explosive will be arranged. Blasting can be conducted at any time during the day.

II. Blasting signal

- a. Blasting for opening entrance and exit of the tunnel:
 - + Flag + warning sign signal blasting area
 - + The first signal: (explosive charging signal) when a long whistle or a signal explosion is made, any people, livestock and vehicles not involving in mine charging and blasting must leave the dangerous zone
 - + The second signal 2 (blasting start signal), when two long whistles or two continuous signal explosions are made: blasting will happen 3 or 5 minutes later;
 - + The third signal: (safety signal) three long continuous whistles signal the minefield is already examined and safe. People, livestock and vehicles can continue their pre-blasting activities.
- b. Blasting for opening headrace tunnel

- Signals are the same as those for blasting for opening entrance and exit of the tunnel. Whistle signal is also the same but blasting signal is replaced by power-on/power-off signals;

III. Dangerous zone radius

When the blasting alarm sounds are heard, all people and vehicles and equipment, etc. not related to the blasting must keep away from blasting areas (following the guidance of the blasting guard force):

- a. Blasting for opening entrance and exit of the tunnel:
 - + For humans and livestock ≥ 300 meters
 - + For equipment ≥ 150 meters
- b. Blasting for opening headrace tunnel:
 - + The safety distance follows tunnel blasting regulations;
 - + Safety distance only applies to personnel working within the company and do not apply to local people and other contractors.

Therefore, the Site would like to inform local authorities, agencies, contractors involved in construction nearby the blasting area of blasting time and signals so that local people and contractor staff working (or travelling) surrounding the blasting area must keep out of this area at the aforesaid time.

Receiver:

- As aforesaid;
- Save in office

MANAGING DIRECTOR

(Signed and sealed)

DinhHuy Hoang

Appendix 3: Minutes of interviews with relevant stakeholders

BIÊN BẢN THAM VẤN VỀ CÁC VẤN ĐỀ MÔI TRƯỜNG
DỰ ÁN NHÀ MÁY THỦY ĐIỆN ĐẮK PRING, TỈNH QUẢNG NAM
Đơn vị tham vấn: **Phòng TNMT huyện Nam Giang, tỉnh Quảng Nam**

I. THỜI GIAN, ĐỊA ĐIỂM
Thời gian: Sáng 9.30 ngày 28/12/2015
Địa điểm: Phòng TNMT Huyện Nam Giang

II. THÀNH PHẦN THAM DỰ
Họ tên người được tham vấn: Lê Việt Liên
Chức vụ: Phó trưởng phòng
Cơ quan: Phòng TNMT Huyện Nam Giang

III. NỘI DUNG THAM VẤN

- Các tác động đối với môi trường từ các dự án thủy điện trên địa bàn huyện Nam Giang
- Các ảnh hưởng đến môi trường khi thực hiện Dự án thủy điện Đăk Pring
- Các đơn thư khiếu nại về vấn đề môi trường liên quan đến việc thực hiện Dự án thủy điện Đăk Pring (nếu có)

IV. KẾT QUẢ THAM VẤN

1. Các tác động môi trường của DA Thủy điện trên địa bàn Nam Giang

- Thủy điện Đăk Mi 4, xây dựng trên d. nhánh sông U. Gia. Thiên gia nước chuyển về sông Thu. Bàn. Nước sau đập cao hơn, dòng chảy thực vật không còn.
- Ngoài ra tình trạng khai thác vàng tại đây phát sinh, không kiểm soát được.
- Nước can sông dân đến tình trạng khai thác gỗ trái phép bên kia sông.
- Thủy điện Sông Bung 2 có 1 đường hầm dài 6km để lấy nước. Đã có 1 đoạn sông dài 12km cũng đang tình trạng cạn kiệt.

2. Các ảnh hưởng từ MT khi thực hiện thủy điện Đăk Pring

Dự án Đăk Pring làm cầu khoảng 2km tương suất việc làm đường đi ăn cũng đã làm ảnh hưởng lớn đến diện tích rừng sản xuất trên địa bàn xã.

3. Các đơn thư khiếu nại về vấn đề môi trường liên quan đến việc thực hiện Dự án Thủy điện Đak Pring không có đơn thư khiếu nại liên quan đến vấn đề môi trường của dự án thủy điện Đak Pring.

Đại diện Đơn vị được tham vấn

PHÓ TRƯỞNG PHÒNG
PHÒNG
TÀI NGUYÊN
VÀ MÔI TRƯỜNG
Lê Việt Lợi

**MINUTES OF CONSULTATION ON ENVIRONMENTAL ISSUES
DAKPRING HYDROPOWER PROJECT, QUANG NAM PROVINCE**

Consulted unit: **Division of Natural Resources and Environment**

I. TIME AND VENUE

Time: 9:30am, 28/12/2015

Venue: Nam Giang Division of Natural Resources and Environment (Nam GiangDONRE)

II. PARTICIPANTS

Full name: Le Viet Lieu

Position: Deputy Head

Workplace: Nam Giang Division of Natural Resources and Environment

III. CONSULTING CONTENTS

- Environmental impacts of the hydropower projects in Nam Giang District
- Environmental impacts of DakPring Hydropower Project
- Written complaints on environmental issues related to the implementation of DakPring Hydropower Project (if any)

IV. CONSULTING RESULTS

1. Environmental impacts of DakPring Hydropower Project in Nam Giang District
 - DakMi 4 Hydropower Project is located on a branch of Vu Gia River. At the present, water of Vu Gia River runs into Thu Bon River, section of river behind the dam is dry, fauna and flora have disappeared.
 - In addition, gold mining has risen and cannot be controlled.
 - Shallow water leads to illegal logging on the side of the river
 - Song Bung 2 Hydropower Project involves one 6km tunnel to collect water. As a result, one section of the river 12km long becomes dry as well.
2. Environmental impacts of DakPring Hydropower Project
 - DakPring Hydropower Project has made 2km section of the stream dry.
 - Construction of access roads has caused significant impacts on production forest in the commune.
3. Written complaints on environmental issues related to the implementation of DakPring Hydropower Project
 - There is no written complaint on environmental issues related to the implementation of DakPring Hydropower Project

Representative of consulted unit

Deputy Head of Nam GiangDONRE

Le Viet Lieu

BIÊN BẢN THAM VẤN VỀ CÁC VẤN ĐỀ MÔI TRƯỜNG

DỰ ÁN NHÀ MÁY THỦY ĐIỆN ĐẮK PRING, TỈNH QUẢNG NAM

Đơn vị tham vấn: UBND xã Cha Val, huyện Nam Giang, tỉnh Quảng Nam

I. THỜI GIAN, ĐỊA ĐIỂM

Thời gian: 14:50 ngày 29/12/2015

Địa điểm: UBND xã Chaval

II. THÀNH PHẦN THAM DỰ

Họ tên người được tham vấn: Tô Đền Sơn

Chức vụ: Chủ tịch xã

Cơ quan: UBND xã Chaval

III. NỘI DUNG THAM VẤN

- Hoạt động khai thác trái phép liên quan đến việc thực hiện Dự án Thủy điện Đắc Pring
- Tình trạng mưa lũ tại suối Đắc Pring trong quý III và IV năm 2015
- Các tác động đến môi trường khi thực hiện Dự án Thủy điện Đắc Pring
- Các tác động đến cộng đồng dân cư khi thực hiện Dự án Thủy điện Đắc Pring

IV. KẾT QUẢ THAM VẤN

1. Hoạt động khai thác trái phép liên quan đến việc thực hiện Dự án
lồng sông có khả năng khai thác cát. Từ khi có Dự án
điện khai, một tuyến đường khai thác cát mở rộng
dân (nhưng họ có giấy phép khai thác cát) có tình
trạng tranh giành khu vực khai thác.


Một số trường hợp tranh sá bằng mìn phát sinh từ
sau khi Dự án triển khai tại địa phương.

Hoạt động khai thác trái phép
không phát sinh khai thác động thực vật trái phép
khi Dự án triển khai.

Giải tỏa an toàn chuẩn bị mặt bằng cho Dự án, một
số vụ khai thác gỗ (≈ 15 khối) do người dân địa
phương thực hiện.



Xã, thôn không được thu tài nguyên khi Chủ đầu tư
xây dựng, thi công Dự án.
Đại diện UBND xã kiến nghị Chủ đầu tư có những
hỗ trợ đối với Ủy ban khi triển khai Dự án tại địa
phương.

Đại diện Đơn vị được tham vấn

Tư Đền Sơn



MINUTES OF CONSULTATION ON ENVIRONMENTAL ISSUES
DAKPRING HYDROPOWER PROJECT, QUANG NAM PROVINCE

Consulted unit: **Cha Val CPC, Nam Giang District, Quang Nam Province**

I. TIME AND VENUE

Time: 2:30 pm, 29/12/2015

Venue: Cha Val Communal People's Committee (CPC)

II. PARTICIPANTS

Full name: To Den Son

Position: Chairman

Workplace: Cha Val Communal People's Committee

III. CONSULTING CONTENTS

- Illegal mining related to the implementation of DakPring Hydropower Project
- Rain and floods in DakPring Stream in the third and fourth quarter of 2015
- Environmental impacts of the DakPring Project
- Impacts of DakPring Project on local communities

IV. CONSULTING RESULTS

1. Sand mining, illegal logging and animal hunting related to the implementation of the Project

Sand is likely to be mined from the riverbed. Since hydropower projects started, a road serving sand mining has been expanded, local people (households obtained sand mining permits) disputed the sand mining area.

There were a number of cases of fishing with landmines recorded when the projects have been implemented in the locality.

Illegal logging and animal hunting have not occurred when the Project has been conducted.

In the site preparation phase, a number of logging cases (about 17 wood blocks) have been caused by local people.

Local people in villages, commune have not taken advantage of natural resources when the Project owner has conducted the Project.



The 2nd Environmental Monitoring Report

Representatives of Cha Val Communal People's Committee requested the Project owner to provide Cha Val Communal People's Committee with assistances when they implement the Project in the commune.

Representative of consulted unit

To Den Son

DỰ ÁN THỦY ĐIỆN ĐẮKPRING

Giám sát môi trường

Biên bản phỏng vấn sâu

Nội dung: Tham vấn ý kiến của đơn vị nhà thầu về các vấn đề môi trường của Dự án Thủy điện ĐăkPring – huyện Nam Giang – tỉnh Quảng Nam

Người được phỏng vấn:

Họ và tên: Nguyễn Tuấn Phi
 Tuổi: 57 Giới tính: Nam
 Chức vụ: Trưởng công trường
 Cơ quan: Công ty Cổ phần Xây dựng và phát triển điện

I. Thông tin về nhà thầu

- Thời gian thi công dự án : 12/11/2014
- Số lượng công nhân : 30 công nhân
- Số lượng lần trải : 2 lần trải

II. Các biện pháp giảm thiểu tác động đến môi trường

1. Các biện pháp giảm thiểu tác động đến môi trường không khí:

a) Trong quá trình vận chuyển nguyên vật liệu:

thiên tại tại công trường đang có vận chuyển đá, 3 xe
 luân phiên đi phát sinh bụi phát sinh nhỏ
 Trung bình 30 chuyến / ngày. Việc vận chuyển ở tốc độ thấp
 và bên hành phun nước 2 lần / ngày dọc đường vận chuyển

b) Trong quá trình trộn bê tông:

Máy bê tông 250 lít, phát sinh bụi thường xuyên
 thiên tại đang thi công móng trạm trộn để lấp trạm
 bê tông lớn

2. Các biện pháp giảm thiểu tiếng ồn:

Tiếng ồn phát sinh không đáng kể, chủ yếu phát sinh
 từ máy xúc đất và xe tải vận chuyển

3. Các biện pháp giảm thiểu tác động đến môi trường nước mặt:

Đất đá khai thác dọc bờ suối được đổ tại bờ thải, không
 sông không bị thu nhận khi thực hiện các hạng mục

4. Các biện pháp giảm thiểu tác động do xói mòn, sạt lở đất:

5. Các biện pháp giảm thiểu nguy cơ cháy nổ:

Việc nổ mìn tại công trường được thực hiện bởi đơn vị chuyên môn (Công ty hóa chất mìn Trung trung bộ).

6. Các biện pháp xử lý chất thải rắn sinh hoạt, chất thải rắn xây dựng, chất thải nguy hại:

a) Chất thải rắn sinh hoạt:

Chất thải được đào hố chôn.

b) Chất thải rắn xây dựng:

Chủ yếu là đá thải, được tập kết tại bãi đá của địa phương.

c) Chất thải nguy hại:

Dầu thải được lưu trữ trong phi và xử lý khi số lượng nhiều.

7. Các biện pháp đảm bảo an toàn giao thông khu vực:

Xe vận chuyển tới địa thấp.

8. Các biện pháp đảm bảo an toàn lao động và sức khỏe công nhân:

Biên báo báo hiện khu vực thi công được lắp đặt tại đường vào công trường.
Thời gian nổ mìn được thông báo để biên báo.

9. Những khó khăn trong việc thực hiện các biện pháp giảm thiểu trên:


.....
.....
.....
.....

10. Các vấn đề phát sinh còn tồn tại:

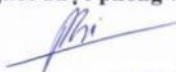
..... không gặp vấn đề cần giải quyết.....
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Chauvan....., ngày 29 tháng 12 năm 2015

Người phỏng vấn


Trinh Ha Anh

Người được phỏng vấn,


Nguyễn Tuấn Phi

DAKPRING HYDROPOWER PROJECT**Environmental Monitoring****Minutes of In-depth interview**

*Contents: Interview with **contractor** on environmental issues of DakPring Hydropower Project – Nam Giang District – Quang Nam Province*

Information of Interviewee:

Full name: Nguyen Tuan Phi

Age: 37 Gender: Male

Position: Site superintendent

Workplace: Consulting Construction & Electric power development JSC

I. Information of contractor

1. Construction period: 12/11/2014
2. Number of workers: 30 workers
3. Number of camps: 02

II. Mitigation measures for environmental impacts

1. Mitigation measures for impacts on air quality
 - a) During transportation of construction materials

Currently, three vehicles in the construction sites have transported rocks alternately. The rocks were generated from blasting.

On average, there were 30 trips per day. The vehicles have been driven at slow speed; moreover, waterspraying has been conducted along the transportation route 3 times per day.

- b) During concrete mixing

250 litres concrete mixer operates infrequently. Currently, foundation of concrete mixing plant has been constructed to assemble machines.

2. Mitigation measures for noise

Noise generated is insignificant. Noise is mainly caused by excavators and trucks.

3. Mitigation measures for impacts on surface water

Soil and rocks exploited along the sides of the stream were dumped into disposal sites, as a result, the construction of the Project items has not narrowed riverbed.

4. Mitigation measures for impacts by erosion and landslides

5. Mitigation measures for fire and explosion risks

Blasting on site has been carried out by a specialized services provider (Trung Bo Mining Chemical Company)

6. Mitigation measures for domestic solid waste, construction solid waste and hazardous waste

a) Domestic solid waste:

Domestic solid wastes were collected and buried

b) Construction solid waste

Construction solid waste mainly includes waste rocks that have been collected at the rock gathering area in the locality.

c) Hazardous waste

Waste lubricant has been collected in drums. When the volume of waste lubricant is significant, it will be treated.

7. Measures for ensuring traffic safety in the project area:

Transporting vehicles have been driven at slow speed

8. Measures for ensuring occupational safety and workers' health

Construction signs have been provided on access roads to the construction sites.

Blasting time was given on signs.

9. Difficulties in implementing these abovementioned measures

10. Other outstanding issues

There is no outstanding issue arisen

Cha Val, 29 December, 2015

Interviewer

(signed)

Trinh Ha Anh

Interviewee

(signed)

Nguyen Tuan Phi

DỰ ÁN THỦY ĐIỆN ĐẮKPRING

Giám sát môi trường

Biên bản phỏng vấn sâu

Nội dung: Tham vấn ý kiến của đơn vị nhà thầu về các vấn đề môi trường của Dự án Thủy điện ĐăkPring – huyện Nam Giang – tỉnh Quảng Nam

Người được phỏng vấn:

Họ và tên: T. Nguyễn Đăng Khoa

Tuổi: 42 Giới tính: Nam

Chức vụ: Kỹ thuật thi công

Cơ quan: Công ty TNHH xây dựng 564

I. Thông tin về nhà thầu

1. Thời gian thi công dự án: 12/11/2014

2. Số lượng công nhân: 40

3. Số lượng lần trại: 2

II. Các biện pháp giảm thiểu tác động đến môi trường

1. Các biện pháp giảm thiểu tác động đến môi trường không khí:

a) Trong quá trình vận chuyển nguyên vật liệu:

..... Mỗi ngày khoảng 6 xe vận chuyển NVL hoạt động
(15m³/xe)

b) Trong quá trình trộn bê tông:

..... lắp máy trộn vào tháng 9, trung bình mỗi ngày hoạt động
phải được 200 khối bê tông

2. Các biện pháp giảm thiểu tiếng ồn:

..... Tiếng ồn chủ yếu từ máy nghiền đá (15 ngày/tháng)
và máy trộn bê tông (30 ngày/tháng)

3. Các biện pháp giảm thiểu tác động đến môi trường nước mặt:

4. Các biện pháp giảm thiểu tác động do xói mòn, sạt lở đất:

Xây dựng kênh thoát nước dọc theo đường trường vào trạm.
Nước thải SH dẫn theo kênh thoát nước đến suối, tránh
tình trạng nước thải chảy tràn lan xuống lòng suối.

5. Các biện pháp giảm thiểu nguy cơ cháy nổ:

Không thực hiện các hàng rào, cần và phải bơm mùn.

6. Các biện pháp xử lý chất thải rắn sinh hoạt, chất thải rắn xây dựng, chất thải nguy hại:

a) Chất thải rắn sinh hoạt:

Chôn các chất gần khu sinh hoạt của công nhân.

b) Chất thải rắn xây dựng:

Đất đá thải bỏ được gom và xử lý khi không
nhều.

c) Chất thải nguy hại:

Việc thi công không phải sinh nhiều chất thải nguy hại.

7. Các biện pháp đảm bảo an toàn giao thông khu vực:

Xe vận chuyển vào công trường và vận tải chậm.

8. Các biện pháp đảm bảo an toàn lao động và sức khỏe công nhân:

Không phải sinh một an toàn lao động và sức
khỏe công nhân.

9. Những khó khăn trong việc thực hiện các biện pháp giảm thiểu trên:


Điều kiện cơ sở vật chất còn nhiều hạn chế, công nhân và quản lý nhà thầu cố gắng đảm bảo môi trường khu vực sinh hoạt và khu vực thi công

10. Các vấn đề phát sinh còn tồn tại:


Không phát sinh các vấn đề cần giải quyết

Chaval..., ngày 29 tháng 12 năm 2015

^{được}
Người phỏng vấn


Nguyễn Đăng Khoa

Người ☐ phỏng vấn


Trịnh Hà Anh

DAKPRING HYDROPOWER PROJECT**Environmental Monitoring****Minutes of In-depth interview**

*Contents: Interview with **contractor** on environmental issues of DakPring Hydropower Project – Nam Giang District – Quang Nam Province*

Information of Interviewee:

Full name: Nguyen Dang Khoa

Age: 42

Gender: Male

Position: Construction engineer

Workplace: Construction No.564 Co., Ltd

I. Information of contractor

1. Construction period: 12/11/2014
2. Number of workers: 40
3. Number of camps: 02

II. Mitigation measures for environmental impacts

1. Mitigation measures for impacts on air quality
 - a) During transportation of construction materials

There were about 6 vehicles transporting materials per day (15m³ per vehicle).

- b) During concrete mixing: Concrete mixer was assembled in September. On average, there were 200m² of concrete mixed daily.

2. Mitigation measures for noise

Noise was mainly generated from rock crusher (15 days per month) and concrete mixer (all 30 days)

3. Mitigation measures for impacts on surface water
4. Mitigation measures for impacts by erosion and landslides

Establish drainage at the bottom of positive talus along access road to the powerhouse.

Domestic wastewater runs into drainage and then runs into the stream, avoid wastewater runoff into the stream

5. Mitigation measures for fire and explosion risks

Detection and disposal of bomb, mine and explosive ordnance were not required.

6. Mitigation measures for domestic solid waste, construction solid waste and hazardous waste

a) Domestic solid waste:

Domestic waste was buried near the worker camps

b) Construction solid waste

When the volume of waste soil and rock was large, they would be collected and treated

c) Hazardous waste

Construction has caused small volume of hazardous waste

7. Measures for ensuring traffic safety in the project area

Vehicles in construction sites have been driven at slow speed

8. Measures for ensuring occupational safety and workers' health

There has been no health or occupational incident.

9. Difficulties in implementing these abovementioned measures

Since facility conditions are limited, workers and contractor managers tried to ensure living and working conditions.

10. Other outstanding issues

There is no outstanding issue arisen

Cha Val, 29 December, 2015

Interviewee

(signed)

Nguyen Dang Khoa

Interviewer

(signed)

Trinh Ha Anh

DỰ ÁN THỦY ĐIỆN ĐẮKPRING

Giám sát môi trường

Biên bản phỏng vấn sâu

Nội dung: Tham vấn ý kiến của đơn vị nhà thầu về các vấn đề môi trường của Dự án Thủy điện ĐăkPring – huyện Nam Giang – tỉnh Quảng Nam

Người được phỏng vấn:

Họ và tên: Huỳnh Quang Huy

Tuổi: 31 Giới tính: Nam

Chức vụ : ... Phó trưởng ... tổ kỹ thuật ... - ... Công trường thủy lợi ... Đak Pong

Cơ quan: Công ty Cổ phần Xây dựng 47

I. Thông tin về nhà thầu

1. Thời gian thi công dự án : 27/9/2015

2. Số lượng công nhân : 30

3. Số lượng lần trải : 2

II. Các biện pháp giảm thiểu tác động đến môi trường

1. Các biện pháp giảm thiểu tác động đến môi trường không khí:

a) Trong quá trình vận chuyển nguyên vật liệu:

- Xe, Chén, nguyên vật liệu, Xi măng, Cát, đá, Sắt thép, Thép, Phụ mại

b) Trong quá trình trộn bê tông:

- Tôi tin người rất lịch nhĩu đó, sẽ trục thĩi thĩc bĩn bĩn kĩng.
- trĩn bĩn bĩn kĩng trĩn bĩn bĩn

2. Các biện pháp giảm thiểu tiếng ồn:

- Thuận và Huệ như hai cái đèn, huyên và Huệ như hai cây nến, sáng cùng một lúc.

• Khu vực thực hiện nỗ lực cách xa khu dân cư và khu vực dân
trại của cộng đồng

3. Các biện pháp giảm thiểu tác động đến môi trường nước mặt:

- không thể hiện ra: chủ: lòng ước: khát vọng
- mức thái tử học: tâm: để bị tâm: được lòng: trong: cái: hồ: thu

không đổ... tư... xếp... xuống... lòng... suối!

4. Các biện pháp giảm thiểu tác động do xói mòn, sạt lở đất:

... Hoạt động thi công hoàn không gây sai lệch đầu.

- ### 5. Các biện pháp giảm thiểu nguy cơ cháy nổ:

- Thước kẻ đặt dư trên tờ giấy kẻ... có lợi... chống sét... để tránh...
xử của thể của... học
- Rung, biến động, biến đổi... của... theo sự... theo thời gian... thước kẻ...
nguyên nhân... liên

6. Các biện pháp xử lý chất thải rắn sinh hoạt, chất thải rắn xây dựng, chất thải nguy hại:

- a) Chất thải rắn sinh hoạt:

- the gợn chữ thái căn sinh hoạt bằng thừng rơm
- tận dụng những đồ lòn, vỏ bao bì tái sử dụng hoặc bán phế liệu
- tái thái lõi lòn rồi tập trung 1 tuần / 1 lần

- b) Chất thải rắn xây dựng:

Chất thải rắn xây dựng chủ yếu là đá tảng quá trình thi công hầm
đào đất tập trung lại khu thiết kế đã sẽ được sử dụng trong quá
trình đào bới tổng thi công đường hầm

- c) Chất thải nguy hại:

• Dầu khaki được chứa trong thùng phi khối lượng dầu thải không lớn

7. Các biện pháp đảm bảo an toàn giao thông khu vực:

- Giảm độ độc và chuyển khí qua khu vực tầng dần dần, các khu vực gần các vách tường, góc là

8. Các biện pháp đảm bảo an toàn lao động và sức khỏe công nhân:

Công nhân tuyệt lương bị sai thiết bị an toàn...chức quân áo bảo hộ
mũ...giày...lái công nhân thủ công làm việc trong bụi nung tại
nhà máy

9. Những khó khăn trong việc thực hiện các biện pháp giảm thiểu trên:

.....Đón và không gặp những khó khăn trong việc thực hiện các biện pháp
.....quản lý trên.....

10. Các vấn đề phát sinh còn tồn tại:

.....Chưa có vấn đề về môi trường nào phát sinh.....

Chàkal....., ngày 29 tháng 12 năm 2015

Người phỏng vấn



Trần Quang Huy

Người được phỏng vấn



Huỳnh Quang Huy

DAKPRING HYDROPOWER PROJECT**Environmental Monitoring****Minutes of In-depth interview**

Content: Interview with **contractor** on environmental issues of DakPring Hydropower Project – Nam Giang District – Quang Nam Province

Information of Interviewee:

Full name: Huynh QuangHuy

Age: 31

Gender: Male

Position: Leader of technical team – DakPring tunnel construction site

Workplace: Construction No. 47 Joint Stock Company

I. Information of contractor

1. Duration of construction: 27/09/2015
2. Number of workers: 30
3. Number of camps: 2

II. Mitigation measures for environmental impacts

1. Mitigation measures for impacts on air quality
 - a) During construction materials delivery:
 - Delivery vehicles were covered with canvas
 - b) During concrete mixing
 - Spraying materials before concrete mixing
 - Concrete was mixed by concrete mixing plant
2. Mitigation measures for noise
 - Explosives were located in drilled holes which were filled with sand bags
 - Blasting area was far from any settlement and camps site
3. Mitigation measures for impacts on surface water
 - Vehicles washing in DakPring Stream was terminated
 - Wastewater generated from concreting was treated by sedimentation tank before discharging into the environmental.
4. Mitigation measures for impacts by erosion and landslide
 - Construction of tunnel caused no landslide.
5. Mitigation measures for fire and explosion risks

- Explosives were stored in a separate storage with water and sand tanks, lightning arrester rod.
- Warning signs and restriction signs were installed in explosive storage and blasting area
- 6. Mitigation measures for domestic solid waste, construction solid waste and hazardous waste
 - a) Domestic solid wastes
 - Domestic solid wastes were collected in dustbins
 - Recyclable wastes were collected for recycle or selling
 - Wastes were collected every week
 - b) Construction solid wastes
 - Construction solid wastes are mainly rocks generated from blasting
 - Rocks were gathered in a designed area to be used for concreting when tunnel construction is made.
 - c) Hazardous waste
 - Refuse oil was contained in tanks with insignificant volume.
- 7. Measures for ensuring traffic safety in the project area:
 - Reducing speed when driving through settlements or intersections with national highway
- 8. Measures for ensuring occupational safety and workers' health:
 - Providing personal protective equipment such as boots, clothes, and helmets for workers. Workers involving in blasting were provided with earplugs to avoid big noise.
- 9. Difficulties in implementing these abovementioned measures:
 - No difficulty
- 10. Other outstanding issues:
 - No outstanding issue arisen

Cha Val, 29 December, 2015

Interviewer

(signed)

Tran QuangHuy

Interviewee

(signed)

Huynh QuangHuy

Appendix4: Photos taken during the 2nd environmental monitoring***Consultations with relevant stakeholders***

Consultation with the representative of Nam GiangDONRE



Consultation with the representative of Nam Song Bung Protective Forest Management Board



Consultation with representatives of Cha Val Commune People's Committee



Interviews with households living nearby project area





Interview with representative of the contractor in charge of tunnel construction - Construction No. 47 JSC.



Interview with representative of the contractor in charge of powerhouse construction - Consulting Construction and Electric Power Development JSC

Sampling and measurement of air and surface water



Air sampling and measurement on National Highway 14D – Dak Ring Bridge



Air sampling and measurement at the dam site



Surface water sampling and measurement at the dam site



Surface water sampling and measurement at the powerhouse site

Field survey in the 2nd environmental monitoring



Vegetation at the dam site



Vegetation at the powerhouse site



Dam construction site: rock and soil gathered to open a new access road along stream



Access bridge narrowed DakPring stream bed



Erosion happened on access road to the dam site



Landslide due to opening an access road to the powerhouse site



Slope at the dam site was reinforced but catchment was not established.



Slope at the powerhouse site was reinforced and catchment was not established.

Appendix5: List of consulted persons

No.	Full name	Gender	Ethnicity	Address/Position
1.	Tran Dinh Phuc	Male	Kinh	Head of Hydropower Section– Central Grid Company
2.	Tran Ngoc Quyen	Male	Kinh	Member of supervision team – Central Grid Company
3.	Nguyen Van Truong	Male	Kinh	Nam Giang Division of Natural Resources and Environment
4.	Nguyen Tuan	Male	Kinh	Head of Nam Song Bung Protective Forest Management Board
5.	Tran Thanh Hien	Male	Kinh	Staff of Nam Song Bung Protective Forest Management Board
6.	Pham Huu Nghia	Male	Kinh	Staff of Song Thanh Nature Reserve Management Board
7.	Nguyen Tuan Phi	Male	Kinh	Superintendent - Consulting Construction and Electric Power Development JSC
8.	Huynh Quang Huy	Male	Kinh	Technical team leader – Construction No. 47 Joint Stock Company
9.	Nguyen Dang Khoa	Male	Kinh	Construction Engineer – Construction Company Limited 564
10.	Mr Tuong	Male	Kinh	Vice superintendent –Nghe An Hydraulic Construction No.1 JSC
11.	To Den Son	Male	Co Tu	Chairman of Cha Val Commune People's Committee
12.	To Den Minh	Male	Co Tu	Head of Cha Val Office of Public Security
13.	BNuoch Denh	Male	Co Tu	Cadastral officer of Cha Val Commune
14.	To Den Tho	Male	Co Tu	Cadastral officer of Cha Val Commune
15.	BNuoch Bong	Male	Co Tu	Forester of Cha Val Commune



No.	Full name	Gender	Ethnicity	Address/Position
16.	Le Thi Hanh	Female	Co Tu	Can Don Village – Cha Val Commune
17.	Pham Trung Kien	Male	Co Tu	Can Don Village – Cha Val Commune
18.	Po Loong Plui	Male	Co Tu	Ta Un Village – Cha Val Commune
19.	Bnup Vuong	Male	Co Tu	Can Don Village – Cha Val Commune
20.	A Rat Thi Hau	Female	Co Tu	Can Don Village – Cha Val Commune